2007 Purdue University Combined Research and Extension Annual Report

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I. Report Overview

1. Executive Summary

The Power of Purdue Agriculture:
Empowering the Citizens of Indiana

Plan of Work Summary

From 2003 through 2005, Purdue University, the Cooperative Extension Service, the College of Agriculture, the College of Consumer and Family Sciences and the School of Veterinary Medicine collected and reviewed stakeholder input from throughout the state of Indiana to determine the education, research and outreach priority needs for its citizens. In 2005 alone, nearly 4600 people participated in interviews and community sessions, with approximately 10% of the 1700 interview participants coming from underserved or under-represented populations. Additional interviews with stakeholders representing state level organizations and agencies were conducted to assess the needs of state entities. Stakeholders recognized Purdue as a trusted source of information and asked that we continue our efforts to strengthen farms and families, and inform businesses and communities. This state-wide process lead to the identification of 10 program areas in which Purdue University faculty, research and extension staff would address the needs and aspirations of the citizens of Indiana.

Many of the planned programs respond to issues identified in the strategic plans of both the State of Indiana and Purdue University. Agriculture continues to have a significant role in Indiana's economy and represents an area for economic growth and development. About twenty percent of the jobs and income in the state is directly or indirectly generated from the food and agricultural sector. According to the Indiana Department of Agriculture, because of our productive land base, central location to the U.S. population, innovative research, and manufacturing expertise, Indiana is in a unique position to be a global leader in several food and agriculture areas. With Indiana's diverse agricultural structure, Purdue research and extension plays a vital role in helping people and communities become more productive, prosperous, and sustainable.

One of our primary goals is to effectively integrate research, outreach, and educational efforts to address the identified program areas. For many issues, integrated interdisciplinary teams were already well established at Purdue. For others, research and extension efforts needed to be integrated more efficiently, or new collaborative efforts developed. Another key element is to continue partnerships with industry, regulatory groups, and other stakeholders to increase the potential impact of the research and extension efforts.

The ultimate goals of these planned programs are very similar to the goals of Purdue's engagement strategic plan: to advance Indiana's economic prosperity, enhance educational and learning opportunities, and improve the quality of life of Hoosiers. Individually and collectively, these planned programs contribute to economic prosperity, enhance educational opportunities, and improve the quality of life of our citizens, the global community, and the environment.

Program Areas

- Natural Resources and Environment
- Plants and their Systems
- Animals and their Systems
- Agricultural, Natural Resources, and Biological Engineering
- Food/Non-Food Products: Development, Processing, Quality, and Delivery
- Economics, Markets and Policy
- Human Nutrition, Food Safety, Human Health and Well Being
- Family Well Being
- Youth Development
- Economic, Community Development

Natural Resources and Environment
The integrated research and extension programs in Natural Resources and Environment include faculty and staff from 8

departments within the College of Agriculture. One of the primary segments of the program involves increasing knowledge of the relationship between soils, nutrients, and plants. Another program teaches landowners and land managers to evaluate the condition of forest lands and undertake management and restoration activities to increase and improve the productivity of forest resources, particularly hardwoods. A number of activities are aimed at preventing or mitigating pollution of natural resources, whether from natural causes or as a result of human activity. For example, the mission of the Animal Manure Management Common Interest Group is to provide scientifically valid information and technologies that are economically sound, feasible for implementation, and also promote environmental stewardship to livestock and poultry producers, technical service providers and consultants, government officials and the general public. The Water Quality Common Interest Group addresses non-point sources of water pollution and loss of riparian habitat by working with land owners and managers to participate in collaborative watershed planning and adoption of sustainable land use practices.

Plants and Their Systems

Research and Extension programs are conducted to discover and disseminate knowledge that will help row crop producers (primarily corn and soybean, along with wheat and forages) and horticultural crop growers (fruit, vegetables, and ornamental plants) produce their crops more sustainably while also strengthening rural economies. The Small Farms and Sustainable Agriculture Team assists entrepreneurs in establishing small or alternative agricultural enterprises, through professional development opportunities for educators and through direct programming for potential producers. The Consumer Horticulture Team provides professional development opportunities for county Extension educators to assist them in answering the ever-increasing number of requests for information on home horticulture.

Animals and Their Systems

Research projects are targeted at understanding the biology of poultry and livestock at the molecular, cellular, and systemic level, to improve the profitability of poultry and livestock production while minimizing environmental impacts and enhancing the health and well-being of animals. Specific efforts span fundamental areas of growth and development, animal behavior and well-being, and sustainable and efficient production systems, using a multi-disciplinary approach. Current efforts investigate the efficient use of by-products and co-products from ethanol and biofuels production facilities as feed for poultry and other livestock. Extension activities enhance producers' management skills to improve economic viability, increase environmental stewardship, improve awareness among youth of the opportunities in livestock production, and to promote a positive image of livestock production in Indiana. These activities are accomplished through publications, workshops, road-shows, and on-farm assistance.

Agricultural, Natural Resources, and Biological Engineering

Enhanced environmental safety and increases in bio-fuels production are high priority policy issues in Indiana. Programs such as a statewide energy summit, nutrient management workshops, and community-level extension education programs are being developed to share research results and dialogue with key stakeholders on the various aspects of this knowledge area. Interdisciplinary teams of scientists are investigating the roles of enzymes, chemical interactions, and processing techniques to enhance the conversion of agronomic crops and biomass into liquid fuels and heating oil. Monitoring studies of livestock operations are being conducted to assist the U.S. Environmental Protection Agency in reducing air pollution through the development of science-based regulatory guidelines. Optimal nutrient management from large-scale livestock operations also is critical from an environmental safety and a more efficient and profitable cropping systems perspective. With the advent of GPS and other electronic and nanotechnology discoveries new machine sensors and data collection and management systems are being developed at Purdue University.

Food and Non-Food Products: Development, Processing, Quality, and Delivery

This program area focuses on conversion of inorganic and organic materials into edible food products and non-food products. In the conversion of food materials, focused commodities include processing and quality improvements for dairy products, grains, pork, and aquaculture. Research and extension programs were developed for better separation of bio-products, improved conversion, and computational modeling approaches to understand and improve processes. Research on the thermal and non-thermal processing systems sought to optimize overall food product quality and safety. The Post-Harvest Processing Grain team and the Computer Integrated Food Manufacturing Center Key are key research and extension integrated groups. For non-food products, much of the emphasis was dedicated to biomass energy and bio-based products, lead by an important integrated research and extension group the Laboratory of Renewable Resources Engineering. The focus of the Wood Research Laboratory is on an additional major Indiana commodity, wood and wood products, especially for conversion into furniture. In the development of both food and non-food products, effective and constant communication with stakeholders, from the farm to processing, are critical for success.

Economics, Markets, and Policy

The global and U.S. agricultural economy is experiencing unprecedented technological and economic change. U.S. domestic agricultural policy, under severe budget constraints, is attempting to reduce direct farmer subsidies and direct federal resources towards programs that improve environmental quality and help sustain rural communities. Purdue University economists, along with colleagues in other disciplines, and in other research institutions around the globe, are collecting the appropriate data and estimating complex global trade and policy models to ascertain the socioeconomic impacts of proposed international and domestic policy changes, potential threats to our food supply from dangerous pathogens or bioterrorism, implications of the adoption of new biotechnology-based crops, and the economic and environmental impacts of concentrated animal production systems. The Center for Trade Policy Analysis conducts periodic conferences with trade and policy stakeholders. Faculty in the Center for Agricultural Business through degree and non-degree-based programs provide the intellectual knowledge and training for agribusiness executives and managers. Finally, faculty and administrators in the College of Agriculture and other colleges and centers across the Purdue University campus are involved in various engagement and extension activities to create jobs and entrepreneurial skills among our citizens and to facilitate technology transfer and economic development throughout the State of Indiana. In addition, several farm management programs such as the annual Farm Management Tour, the Economic Outlook Campaign, and the Top Farmer Workshop share business and marketing management concepts along with the transfer of new farming technologies.

Human Nutrition, Food Safety, and Human Health and Well-Being

Our integrated program for food safety, human health and nutrition includes a wide variety of disciplines in the college of agriculture, the school of veterinary medicine, and the college of consumer and family sciences. Purdue food safety programs focus efforts toward rapid detection of foodborne pathogens, grain processing and control of molds and mycotoxins, non-thermal and thermal food processing treatments to reduce/eliminate pathogens and spoilage organisms, pest control and integrated pest management programs, the impact of human intestinal microflora and human disease, and food safety educational programs for farmers, retailers, and consumers. Examples of food safety integrated multi-disciplinary centers and efforts include the Center for Food Safety Engineering, the Center for Urban and Industrial Pest Management, and the Extension Disaster Education Network. Purdue human nutrition and human health programs focus on the impact of dietary intake and exercise on human health, use and beneficial effects of phytochemicals, cereal processing and nutrition, calcium and bone metabolism, impact of dietary intake and bone health, and nutritional educational programs for the food industry, healthcare, industry professionals, and consumers. Examples of human health and nutrition related research and extension integrated efforts include the Agriculture and Rural Safety and Health Program, Dietary Calcium and Human Health program, and Healthy Well Nourished Hoosiers.

Family Well-Being

Family well being is a high priority for Indiana stakeholders. A variety of programs and delivery methods are offered to strengthen families and help them learn and use positive, personal development and relationship skills as well as teach parents to know and use positive parenting practices. Programs help individuals increase their knowledge of effective financial management and improve their financial stability.

Youth Development

The Indiana 4-H Youth Development Program provides young people with sustained opportunities to gain a sense of belonging, independence, mastery, and generosity. When these essential elements of a positive youth development experience are in place, youth can: master skills to make positive life choices; effectively contribute to decision-making and act responsibly; and positively influence their communities and the general society. 4-H Youth Development Programs provide just such opportunities, relationships, and support for young people to help them acquire the life skills necessary to meet the challenges of adolescence and adulthood. On-going relationships with adults also are essential to positive youth development. These relationships are established with adult volunteers who serve as positive role models for the young people who are affiliated with 4-H programs and activities. Several programs were offered to strengthen and empower both youth participants and their adult advisors.

Economic/Community Development

This planned program area includes five focus areas: Entrepreneurship, Community Planning and Visioning, Workforce Development, Leadership and Civic Engagement, and Public Issues Education. Areas of emphasis for Entrepreneurship are small businesses, especially in rural areas, with specific new opportunities in entrepreneurial agriculture and natural resource enterprises (e.g., agritourism), and the strong and growing interest in entrepreneurship among youth and young adults, women, ethnic minorities, and new immigrants. Community Planning and Visioning aids communities, neighborhoods and regions create their own road map for the future particularly in economic development planning/strategies and land use issues. Extension, in partnership with Purdue's Division of Continuing Education, has been heavily involved in creating several community based Workforce Development learning centers. These centers provide a variety of credit and non-credit offerings based entirely on local demand, using both face to face and distance-education technologies. A rapidly growing body of research

indicates a strong civic infrastructure is a precursor to economic development and in the creation of strong and vibrant

communities, neighborhoods and regions. Extension helps to build strong Leadership and Civic Engagement communities through a variety of leadership programs including Leadership 20/20, i-LEaD, the Master Gardener Leadership Program, and a new Natural Resources Leadership Development Institute. Purdue Extension is playing a key role in Purdue's university-wide engagement effort. When community and regional needs arise at the local level which cannot be addressed by an existing Extension program, Extension personnel can help identify and access specialized resources at Purdue that may be helpful in addressing the need or issue. Public Issues Education training and resources are available to help communities manage controversial public issues.

Program Highlights

Environmental Sustainability

There are few concerns of more far-reaching and long-lasting impact than sustainable agriculture. Indiana has long been an important producer of agricultural products for the global population. Purdue agricultural research and extension programs are key to maintaining farmland productivity, increasing the quality of agricultural soils, and managing on-farm wastes to reduce environmental impacts.

Organic foods lie at the junction of sustainable production, consumer preferences, and personal food safety concerns. Because of the price premium for organically grown products, many Indiana farmers are adopting organic practices and seeking certification for designated acreage. Purdue's Small Farms Team initiated a multi-state IPV workshop to inform farmers of organic practices leading to both high quality products and environment protection. This program was a collaborative effort among several universities, their instructors, and knowledgeable community stakeholders. Participants effectively increased their knowledge in the key program areas of insect prevention, biological control, organic pesticides, and disease prevention, diagnosis and management. After attending, an additional 28% of the attendees rated themselves as being knowledgeable in these areas of organic farming.

Along with increasing interest in organic farming, CAFOs (Confined Animal Feedlot Operations) are among the top concerns of many Indiana citizens. University researchers, faculty, staff, and extension educators and specialists have created an interactive website dealing with the potential effects of CAFOs on the environmental, social, and economic health of surrounding communities. The website features 12 issue papers describing different aspects of CAFOs. Visitors to this site include governmental organizations, environmental groups, and popular press outlets, in addition to use by the original target audience of zoning board members. Among the areas for continuing research by new and established teams are the effects of CAFOs on the local economy and the effects of odor and emissions on the respiratory health of neighbors.

For both conventional and organic commercial production, agribusiness personnel increasingly rely on pest identification and integrated pest management solutions to make economically and environmentally sound pest management decisions. Extension Specialists representing the Purdue departments of Agronomy, Botany and Plant Pathology, and Entomology, and the Office of the Indiana State Chemist presented information on pest management, pesticide regulations and safety, and application equipment and calibration in a series of day-long Crop Management Workshops. Over 750 attendees of the Pest Management Program indicated that, on average, they make or influence pest management decisions on over 24,000 acres. Over 95% of the participants agreed that the workshop improved their pest management decision-making ability and indicated that the workshop was worthwhile. Many indicated that they would share the meeting’s content with colleagues and/or customers.

The management of natural resources at the local level can have significant affects at areas remote from the initial site. The GRAzing SImulation Model (GRASIM) was developed to examine water, nutrient, and carbon flows in pasture environments. This model of the agricultural and biological processes uses state□of□the□art numerical methods to better utilize our natural resources for economic and environmental sustainability. GRASIM is the first comprehensive grazing model to optimize production while minimizing environmental impacts and is currently in use by several U.S. and international institutions. This allows for improved field water management, and more accurate predictions of contaminant transport and transfer (animal wastes applied to soils or emission or animal odors from production facilities). In related research, the regional extension publication “Questions and Answers about Drainage Water Management in the Midwest” explains current knowledge of drainage water management as it relates to local water quality and hypoxia in the Gulf of Mexico. Purdue University collaborated with drainage researchers, extension specialists, federal agency staff, and the agricultural drainage industry to develop and promote new strategies for managing drainage to reduce nitrate losses. More than 8,000 copies of the publication have been distributed throughout the Midwest and nationally to Extension staff, NRCS, ARS, and the drainage industry.

Bioenergy

The explosive growth of the bioethanol and biodiesel industries have been labeled as running the gamut between the ultimate solution to all worldwide problems and the beginning of the apocalypse. For agricultural producers in Indiana, the more pressing issues have focused on maximizing economic returns from grain production, and as ethanol plants come on-line, how best to replace traditional feed sources with coproducts from ethanol processing facilities.

Biofuel production has lead to a more complex structure for grain marketing, including the need for improved storage and pricing decisions. The Department of Agricultural Economics developed and conducted a four-week workshop series to enhance grain marketing skills, with particular focus on how these skills could be applied in the biofuels era. Via IP video, this state-wide series was delivered at 27 locations and attended by over 400 producers and agribusiness professionals. Over 90 percent of participants said the workshops increased their comfort level in using the grain marketing tools described in the program, and said they would either definitely change or possibly change the way they market grain in the future.

The reallocation of corn from livestock feed to energy feedstock has affected nearly all sectors of Indiana agriculture. By necessity, beef cattle producers are replacing or supplementing conventional grain diets with ethanol coproducts (distiller's grain). The rapidity of this paradigm shift requires an almost instantaneous transfer of technology from researchers to producers. A group of animal science specialists, veterinarians, agronomists and extension educators; the "Purdue University Beef Team" collaborated with the Indiana Beef Cattle Association to host ten meetings focused on utilizing distillers grains in beef rations. Satisfaction with the educational meetings was very high and the majority of the producers said they were likely to begin incorporating distiller's grains into their livestock operations.

Researchers have been hard at work on bioenergy, renewable fuels, ethanol, biodiesel, and DDGS issues during the past year. Among other projects, research related to the challenges of adding DDGS to livestock and poultry feeds have begun. Information and publications about these issues is now available on a web site devoted to Bioenergy. Efforts are continuing to address many questions related to these areas.

Human Health

As plant and animal science research efforts continue to delineate the environmental and health consequences of shifting primary grain resources from livestock production to energy production, along with the potential changes in nutritional quality of meat products, our citizens continue to evaluate the relationship between personal consumption and individual health issues. More than half of the youth in the United States eat too much fat, too little fruits and vegetables, and consume too little calcium. A curriculum entitled "Exploring MyPyramid with Professor Popcorn" seeks to establish life-long healthy nutrition practices for youth in grades 1 to 6. Major concepts included in the curriculum have been linked to Indiana's state-wide health and science education standards. In 2006, Extension staff taught and provided evaluation data for the Professor Popcorn program in 38 Indiana counties to a total of 10,424 youths.

As with the national trends, the number of individuals who have diabetes is growing rapidly in the state of Indiana. Annual health care costs for an individual with diabetes are estimated at $10,000 compared to $2,700 for a person without diabetes. Dining with Diabetes consists of four 2□hour sessions utilizing the expertise of extension educators in collaboration with healthcare professionals. They demonstrate healthy food preparation techniques to make meals enjoyable and more nutritious. Participants see the food being prepared and taste several examples of common food dishes. Fifteen extension educators presented Dining with Diabetes 22 times in 16 counties. Of the 310 Indiana residents attending the program, there was an increase in both the number of servings of fruits and vegetables (from 1□3 times a week to 4□6 times a week) and the number of days a week they exercised 20 minutes or more (from an average of 2.6 days a week to 3.2 days a week). The participants also indicated a significant change from using the nutrition facts label "sometimes" toward using the label "frequently".

Purdue Extension professionals are involved in commercial food preparation as well as residential preparation. As part of the ServSafe Food Protection Manager Certification curriculum, "Essentials of Food Safety & Sanitation" is a two day course with 16 hours of instructional time taught by Extension educators using PowerPoint modules, activities, demonstrations, and concluding with an exam, leading to certification by the National Registry of Food Safety Professionals. As a result of the educational outreach through Purdue Extension, a total of 383 out of 433 (88%) participants successfully passed the ServSafe Food Protection Manager Certification course and exam. Certified professionals were more aware that safe food practices, such as frequent hand washing more, separation of raw and ready-to-eat foods, and proper cooling of foods, are key strategies to reducing the risk of food borne illness to foodservice employees and the citizens of Indiana.

Personal and Community Development

Learning how to contribute to society to make life better for oneself and others is an empowering life skill. Youth who volunteer

in community service activities are more likely to graduate, vote, and be philanthropic, and less prone to substance abuse and destructive behavior. Indiana 4□H Youth were encouraged to participate in diverse community service activities, such as assembling and distributing Hero packs to children through Operation Military Kids, conducting events in health care facilities, collecting canned goods for food pantries, providing assistance to community shelters, and community beautification and recycling. Over 18,000 youths participated in community service activities, with many reporting an increased awareness of the level of need in the local community, and developed a sense of pride in giving to others.

The effectiveness of these youth programs relies largely on developing and enhancing the skills of adult volunteers so that 4□H youths are able to participate in a safe and caring environment. The “Essential Elements of Positive Youth Development” focuses on meeting the needs of youth and building life skills which allow them to grow into good citizens and contributing members of their families and communities. 8,243 volunteers reported improved knowledge and skills in supporting, delivering, and/or managing quality positive youth development experiences and program planning for youth.

Along with programs for youth, over 300,000 children under age 6 in Indiana need quality child care. The Child Development Associate Credential is required to meet state licensing regulations. Having CDA training available in local communities and at convenient hours is a critical need. Purdue Extension provided 120 classroom hours of CDA Credential training plus advising for child care providers from 16 Indiana counties in preparation for the national CDA assessment. A total of 78 CDA candidates participated in CDA classes and advising, impacting approximately 1,000 children in their direct care and potentially impacted a total of 5,375 children at the providers’ sites. Five topic areas of the curriculum, health, physical, social, program management, and professionalism, showed significant improvement from pre□test to post□test.

Many communities lack the civic space in which to frame and address issues critical to community sustainability, such as rural-urban interactions, healthy populations, and engaged youth. Extension professional provide that “civic space”, acting as a neutral convener to engage stakeholders and provide research-based information to assist informed decision-making. Extension has been involved in 370 communities helping them build their capacity to identify and address critical issues. One such issue, local government finance, attracted over 600 local government officials at two state-wide sessions. Of those participants, 97% indicated that the session helped them identify important community issues related to local government finance. A session at the Allen County youth summit resulted in three $500 grants for community needs awarded to the youth that applied for them.

Summation

The overall objective of this plan of work is to provide relevant research and extension programs to our citizens. The programs and accomplishments, such as those highlighted above, meet the intended objectives and goals identified by Indiana stakeholders. However, continual review of progress toward ultimate goals and outcomes is an essential part of the process. Teams working on planned programs provide continual review of progress toward goals and outcomes, including assessing whether additional topics should be added to a specific planned program because of changing needs. County Extension Boards will continue to review planned programs on an annual basis to ensure that programs address critical needs. PCARET, the Purdue Council on Agricultural Research, Extension and Teaching, meets semi-annually with county, district, and state administrators to discuss needs and how extension and research are or can address them. An annual conference also provides an opportunity for the state PCARET to review progress on planned programs and provide input on expectations of future needs and programs. The combination of participant evaluations, stakeholder reviews, and team assessments continue to improve the impact of our designated research, education and extension programs, focusing the Power of Purdue Agriculture: Empowering the Citizens of Indiana.

Total Actual Amount of professional FTEs/SYs for this State

Year:2007	**Extension**		**Research**	
	1862	**1890**	**1862**	**1890**
Plan	130.9	0.0	238.5	0.0
Actual	227.0	0.0	505.1	0.0

II. Merit Review Process

1. The Merit Review Process that was Employed for this year

- Internal University Panel
- External Non-University Panel
- Combined External and Internal University External Non-University Panel

2. Brief Explanation

Teams working on planned programs provide continual review of progress toward goals and outcomes, including assessing whether additional topics should be added to a specific planned program because of changing needs. County Extension Boards continue to review planned programs on an annual basis to ensure that programs address critical needs. PCARET, the Purdue Council on Agricultural Research, Extension and Teaching, meets semi-annually with county, district, and state administrators to discuss needs and how extension and research are or can address them. An annual conference also provides an opportunity for the state PCARET to review progress on planned programs and provide input on expectations of future needs and programs.

Hatch research projects are peer reviewed prior to submission to USDA-CSREES. Review panels consist of at least three scientists that include faculty from at least two disciplines. Faculty members are strongly encouraged to collaborate across departments, schools, and universities. Multi-state projects are reviewed by regional department head associations and the Multi-State Review Committee composed of agricultural experiment station directors. Reviewers look for relevance, feasibility, building on previous research, approach and methods, scientific and technical merit.

Academic departments are reviewed every 5 years by an external CSREES team. The research, extension, and teaching components of each department are examined during these reviews. These reviews provide an additional opportunity for merit review of research and extension programming.

III. Stakeholder Input

1. Actions taken to seek stakeholder input that encouraged their participation

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from general public

Brief Explanation

{NO DATA ENTERED}

2(A). A brief statement of the process that was used by the recipient institution to identify individuals and groups stakeholders and to collect input from them

1. Method to identify individuals and groups

- Use Advisory Committees
- Use Internal Focus Groups
- Open Listening Sessions
- Needs Assessments

Brief Explanation

{NO DATA ENTERED}

2(B). A brief statement of the process that was used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting with the general public (open meeting advertised to all)
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional groups
- Meeting specifically with non-traditional individuals
- Survey specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public

Brief Explanation
{NO DATA ENTERED}

3. A statement of how the input was considered

- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Action Plans
- To Set Priorities

Brief Explanation
{NO DATA ENTERED}

Brief Explanation of what you learned from your Stakeholders
Stakeholders recognized Purdue as a trusted source of information and asked that we continue our efforts to strengthen farms and families, and inform businesses and communities.Many of the planned programs in this plan of work respond to issues identified in the strategic plans of both the State of Indiana and Purdue University.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
8246120	0	8603894	0

2. Totaled Actual dollars from Planned Programs Inputs

	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	8061023	0	6754334	0
Actual Matching	8061023	0	7625128	0
Actual All Other	815648	0	24839814	0
Total Actual Expended	16937694	0	39219276	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous years

Carryover	2398273	0	193581	0

V. Planned Program Table of Content

Program #1

V(A). Planned Program (Summary)

1. Name of the Planned Program

Youth Development

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development	100%		100%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	10.0	0.0	0.0	0.0
Actual	31.9	0.0	0.2	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1158221	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
974019	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	14848	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- •Develop curriculum
- •Conduct evaluation/research
- •Participate in collaborations that have a youth focus
- •Conduct educational workshops
- •Provide youth and volunteer training and development
- •Website development

2. Brief description of the target audience

- •Youth --- Grades K-12
- •Volunteers
- •Public/Private School Teachers

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	15000	250000	250000	150000
2007	89729	1572798	474693	345008

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	9	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- New/revised curriculum topics will be developed

Year	Target	Actual
2007	5	5

Output #2

Output Measure

- Ongoing evaluation of 4-H Youth Development programs, events and activities

Year	Target	Actual
2007	25	3937

Output #3

Output Measure

- Youth and adult involvement in youth focused community collaborations

Year	Target	Actual
2007	0	24070

Output #4

Output Measure

- Number of quality, educational workshops for youth audiences

Year	Target	Actual
2007	150	4496

Output #5

Output Measure

- Number of volunteer development opportunities

Year	Target	Actual
2007	100	4043

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	100% of volunteers surveyed will report management of safe environments in which 4-H youth have the opportunity to learn.
2	Number of youth who increased knowledge of good character traits, goal setting, team work, communication techniques, decision making, and handling conflict
3	50% of 4-H youth surveyed will indicate they possess the skills to practice good character, to plan and organize community service activities, and have the skills to be actively engaged in local, state, and national issues
4	100% of youth surveyed at the culmination of their 4-H career will report the life skills developed through the program, know how to set goals, work cooperatively in a team, communicate effectively, make decisions based on data and the opinions of others, honor individual differences and handle conflict.
5	Number of youth involved in community service activities
6	Each of Indiana's 92 counties will establish goals for increasing the types of geographic settings in which programs are offered and increasing the opportunity for youth to be engaged in 4-H club work with a likely result in an increase in the number of youth in 4-H Youth Development Programs.
7	46 Indiana counties will experience growth and diversity in 4-H Youth Development Program opportunities and resources for youth.
8	Each of Indiana's 92 counties will experience growth and diversity in 4-H Youth Development Program opportunities and resources for youth.
9	Each of Indiana's 92 counties will develop a plan for volunteer development focused on educating volunteers to increase their understanding of life skill development, experiential learning, risk management, and group management.
10	Number of volunteers and Extension staff who report improved knowledge and skills in supporting, delivering, and/or managing quality positive youth development experiences and program planning for youth.

Outcome #1

1. Outcome Measures

100% of volunteers surveyed will report management of safe environments in which 4-H youth have the opportunity to learn.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	225

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

4-H volunteers and extension staff are responsible for the safety of the young people with whom they work. There is a need to continually educate and update volunteers regarding safety issues and expectations.

What has been done

Educational programs have been developed and made available for extension staff to present/utilize with their volunteers. The presentations focus on general volunteer responsibility, reporting of suspected child abuse and neglect, safety issues, university policies and guidelines regarding transportation and insurance requirements.

Results

These programs were delivered to new volunteers beginning work with 4-H youth development programs. 100% of those volunteers participating in the program and completing the evaluation follow up indicated that they valued the program being offered and focus effort on following the appropriate guidelines for safety at 4-H events/activities for which they are responsible.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #2

1. Outcome Measures

Number of youth who increased knowledge of good character traits, goal setting, team work, communication techniques, decision making, and handling conflict

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	51515

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

During the pre-teen/early teen years, youth face many issues including peer pressure, assuming responsibility for one,'s own actions and assuming leadership roles.

What has been done

Programs have been developed to offer youth the opportunity to explore relationships with others and develop skills to assume leadership roles in club and organizational settings.4-H Jr. Leader Programs that have as a primary target those youth enrolled in grades 8-12 have been designed to specifically target this age group and offer programs and experiences to build important interpersonal skills

Results

4,881 Indiana youth enrolled and participated in their local Jr. Leader program and activities. 46,634 youth indicated when surveyed that after concluding participation in specific 4-H educational programs they had increased their knowledge of good character traits, goal setting, teamwork, communication techniques, decision making, and handling conflict.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #3

1. Outcome Measures

50% of 4-H youth surveyed will indicate they possess the skills to practice good character, to plan and organize community service activities, and have the skills to be actively engaged in local, state, and national issues

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	46623

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth who develop decision making skills and positive personal character are more likely to cooperate and work well with others. Learning through team building skills allows youth to begin to recognize and identify needs, concerns and interests of others resulting in success when dealing with others

What has been done

Character education programs and team building activities have been conducted. Programs were conducted in fifth grade classrooms to help students develop skills that prevent antisocial and high-risk behaviors. Students are provided with experiences that help them to clarify their roles as citizens, develop decision-making skills, interact with positive role models and explore ideas on issues that are relevant to their lives.

Results

3,431 participant evaluations using the Scale of Juvenile Legal Attitudes (pre-post-test) show that after the program, youth have a better attitude toward laws, law enforcement, the judicial system, and the idea that they must take personal responsibility to abide by laws and report unlawful acts. Additionally, teachers in the classroom report a positive change in general student attitude after completion. 12,882 youth indicated on program evaluations that they possess the skills to practice good character, organize community service activities and to be actively engaged in their community.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #4

1. Outcome Measures

100% of youth surveyed at the culmination of their 4-H career will report the life skills developed through the program, know how to set goals, work cooperatively in a team, communicate effectively, make decisions based on data and the opinions of others, honor individual differences and handle conflict.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	7738

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Life skills gained through experiential learning in 4-H programming develops skills needed by youth to function as leaders in the real world. Research indicates that these skills enable youth to interact with their environment in a manner that promotes responsible decision-making and understanding of self and that these skills are retained by youth as they grow into adulthood.

What has been done

Programming focused on teen skill development is ongoing in community 4-H programming. Extension staff conducted formal evaluations of leadership opportunities afforded teens that focused on youth self-reporting life skills learned through experiences in 4-H programs.

Results

14 Indiana Counties conducted IRB approved evaluations of life skills learned. Skills that are consistently reported include responsibility, decision making, leadership, communication, and self-confidence. Participants overwhelmingly indicated increased confidence in these skill areas following participation in educational opportunities such as focused leadership camps and workshops. Teens also reported that they appreciate and value the opportunity to provide input on future programming of this nature for other youth as well as serving as role models for younger children.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #5

1. Outcome Measures

Number of youth involved in community service activities

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	1000	18702

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Learning how to contribute to society to make life better for oneself and others is a valuable life skill. Youth who volunteer are 50% less likely to abuse drugs, alcohol, cigarettes, or engage in destructive behavior (Search Institute, 1995). Youth who volunteer are also more likely to do well in school, graduate, vote, and be philanthropic (UCLA/Higher Education Research Institute, 1991).

What has been done

Indiana 4-H Youth are encouraged to become involved in community by learning to give back to others through community service activities. Activities range from supporting the Operation Military Kids Program by assembling and distributing Hero packs to the children of recently deployed National Guard and Army Reserve units, to conducting events in health care facilities, collecting canned goods for food pantries, providing assistance to community shelters, community beautification and recycling.

Results

Participating teens,' presence and involvement in their local communities provides both service and encouragement to individuals who sometimes have difficulty fulfilling basic needs. Teens reported an increased awareness of the level of need in the local community as well as options for serving others. They also indicated they are able to ,"put a face on poverty," and developed a sense of pride in giving to others. 18,702 reported to have been involved directly in community service activities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #6

1. Outcome Measures
Each of Indiana's 92 counties will establish goals for increasing the types of geographic settings in which programs are offered and increasing the opportunity for youth to be engaged in 4-H club work with a likely result in an increase in the number of youth in 4-H Youth Development Programs.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	92

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

4-H Youth Development Programs should be designed with intentionality towards providing opportunities to involve youth who are broadly representative of the community.

What has been done

Each Indiana county has established a 4-H Expansion & Revue committee which is tasked with raising awareness of available Extension services and programs among all potential audiences, promoting 4-H involvement, advocating for underserved and underrepresented populations and ensuring Extension programs practice non-discrimination and equal opportunity.

Results

Each Indiana county submitted an annual 4-H accountability report indicating when the Expansion & Revue Committee meeting was conducted accompanied by the recorded minutes from the meeting. A review of the minutes indicated that the counties conducted intentional conversations regarding current 4-H youth development programming. Individuals included in the discussion were found to be broadly representative of the community. They were able to identify where gaps in programming occurred, allowing for staff to strategically plan with volunteers for future programming in the community.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #7

1. Outcome Measures

46 Indiana counties will experience growth and diversity in 4-H Youth Development Program opportunities and resources for youth.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #8

1. Outcome Measures

Each of Indiana's 92 counties will experience growth and diversity in 4-H Youth Development Program opportunities and resources for youth.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #9

1. Outcome Measures
Each of Indiana's 92 counties will develop a plan for volunteer development focused on educating volunteers to increase their understanding of life skill development, experiential learning, risk management, and group management.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	92

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Indiana's 4-H volunteers are crucial to the success of the 4-H Program as they provide the direct link from the university to the 4-H members for the information and activities members need to develop life skills. To enable the 4-H volunteers to fulfill their responsibilities with the 4-H members most effectively, a set of consistent, statewide training materials that can be shared with volunteers in a variety of methods was needed.

What has been done

County plans for volunteer development were created and a survey of volunteers was conducted to assess preferred formats for volunteers to receive continuing updates and development. The Volunteer Development Specialist has worked with a statewide committee to develop educational materials focused on increasing the competency of today's volunteers.

Results

Nearly 1,000 volunteers responded to a survey identifying priority areas for continuing development and methods by which they prefer materials be delivered. The volunteer development committee created a 4-year instructional plan and "toolkit" of resources which is focused on the elements considered to be essential to effective 4-H youth development programming. 319 volunteers at 35 sites participated in an initial training program. Participating volunteers completed evaluations with over 90% of the respondents indicating they appreciated having a quality program delivered via IP video and over 85% indicating they benefited from the on-site facilitation by local Extension staff. Over 70% indicated they were provided with information that will enhance their volunteer role. An analysis of qualitative data indicated most volunteers reporting that the content provided was informative, helpful and caused them to re-think how they will work in the future to better meet 4-H members' needs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #10

1. Outcome Measures

Number of volunteers and Extension staff who report improved knowledge and skills in supporting, delivering, and/or managing quality positive youth development experiences and program planning for youth.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	8243

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

4-H Youth Development Programs are focused on creating opportunities for youth to meet developmental needs and to build important life skills for young people, and the context in which this occurs is key to Extension's ultimate success in this area.

What has been done

Educational programs and materials focused on the Essential Elements of Positive Youth Development have been developed and delivered to 4-H staff and volunteers. These elements assure that 4-H youth participants are able to participate in a safe and welcoming environment where caring relationships with adults are key. The elements focus on meeting the needs of youth and building life skills which allow them to grow into good citizens and contributing members of their families and communities.

Results

8,243 volunteers reported improved knowledge and skills in supporting, delivering, and/or managing quality positive youth development experiences and program planning for youth.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Time series (multiple points before and after program)
- Case Study
- Other (ongoing needs assessment)

Evaluation Results

Key Items of Evaluation

Program #2

V(A). Planned Program (Summary)

1. Name of the Planned Program

Economics, Markets, and Policy

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
601	Economics of Agricultural Production and Farm Management	15%		15%	
602	Business Management, Finance, and Taxation	8%		8%	
603	Market Economics	13%		13%	
604	Marketing and Distribution Practices	27%		27%	
605	Natural Resource and Environmental Economics	11%		11%	
606	International Trade and Development	11%		11%	
607	Consumer Economics	7%		7%	
609	Economic Theory and Methods	3%		3%	
610	Domestic Policy Analysis	4%		4%	
611	Foreign Policy and Programs	1%		1%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	22.0	0.0	18.0	0.0
Actual	27.2	0.0	37.3	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1507092	0	808045	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
678329	0	912221	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	917098	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•The Center for Trade Policy Analysis conducted workshops with stakeholders on the expected economic impacts of trade and domestic agricultural policy.

•The New Ventures Team and staff in the Agricultural Innovation and Commercialization Center offered training programs throughout the state on entrepreneurship and starting new value-added businesses.

•Agricultural policy workshops were conducted with farm groups such as the Indiana Farm Bureau and the Farm Policy Study Group.

•Websites such as the Agricultural Economic Reports provided timely analysis on marketing, management, and policy issues.

•Econometric and simulation models were specified and validated to determine the socioeconomic impacts of proposed international trade and domestic agricultural policy proposals.

2. Brief description of the target audience

•Indiana farmers
•State and Federal government policy makers, especially the Indiana State Department of Agriculture and the Office of the Secretary of Agriculture
•Indiana general farm and commodity organizations such as Indiana Farm Bureau, Indiana Pork Producers, Indiana Soybean Alliance
•Agricultural input supply industry managers such as Monsanto, DuPont-Pioneer, John Deere, Beck Hybrids, Dow-AgroSciences
•Agricultural marketing firms such as Tate & Lyle, ADM, Countrymark, Cargill
•International trade organizations and officials including the Office of the U.S. Special Trade Representative and WTO in Geneva

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	10000	25000	250	2000
2007	11788	306379	638	231

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	168	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of programs with state and federal government officials on trade and farm policy development and impact assessmen

Year	Target	Actual
2007	10	26

Output #2

Output Measure

- Number of programs offered to agri-business leaders by the Center for Food and Agricultural Business

Year	Target	Actual
2007	15	35

Output #3

Output Measure

- Number and quality of peer reviewed research publications in professional journals on economics, markets, and policy

Year	Target	Actual
2007	25	168

Output #4

Output Measure

- Number of programs with Indiana farmers on farm management and commodity marketing such as the annual Top Crop Farm

Year	Target	Actual
2007	50	132

Output #5

Output Measure

- Number of programs on the economics of biofuels

Year	Target	Actual
2007	{No Data Entered}	31

Output #6

Output Measure

- Number of attorneys and farmers trained in estate planning and retirement

Year	Target	Actual
2007	{No Data Entered}	32

Output #7

Output Measure

- Number of tax schools offering updates on U.S. and Indiana tax law

Year	Target	Actual
2007	{No Data Entered}	15

Output #8

Output Measure

- Number of programs on women in agriculture

Year	Target	Actual
2007	{No Data Entered}	8

Output #9

Output Measure

- Number of programs on entrepreneurship

Year	Target	Actual
2007	{No Data Entered}	10

Output #10

Output Measure

- Number of programs on risk management in agriculture

Year	Target	Actual
2007	{No Data Entered}	8

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of participants who increase their knowledge of commodity markets and marketing contracts
2	Number of Indiana farmers who increase the use of commodity markets and marketing contracts to reduce price risk and increase profitability
3	Percentage increase in the productivity and profitability of Indiana farms
4	Number of farm and commodity organization members who increase their knowledge of the potential economic impacts of alternative farm commodity program provisions such as implications for exports, domestic utilization and price, farm income, and government farm program expenditures
5	Number of research-based studies, publications, and reports for policy organization members and legislators on the consequences of their international trade and farm commodity program choices in Farm Bill and related federal legislation
6	Provide research-based analysis of trade liberalization and market-oriented policies to guide government policy-makers as they draft appropriate legislation to increase the competitiveness of U.S. agriculture in a global market
7	Number of agribusiness firms, private investors, commodity organization leaders, and government officials who increase their knowledge of the economic potential to increase the number and size of new and current value-added agricultural industries such as grain and livestock processing.
8	Increase by 5% annually the number of new value-added agricultural associated small businesses in Indiana
9	Increase gross farm income of Indiana farmers by generating additional market opportunities for grain, livestock, and specialty crops
10	Number of bankers and farmers who increased their knowledge of agricultural finance and risk management
11	Number of farm women who increase their business knowledge
12	Number of attorneys and tax accountants who increased their knowledge of tax law and estate planning
13	Number of people more aware of agritourism opportunities

Outcome #1

1. Outcome Measures

Number of participants who increase their knowledge of commodity markets and marketing contracts

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	2125

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Grain marketing became more complex with the recent growth in demand for ethanol and soy biodiesel. The value of 2007 corn, soybean, and wheat crops for Indiana farmers reached $5 billion, an increase of 20% compared to 2006. Improving storage and pricing decisions in a period of higher and more volatile prices is critical. This new era brings opportunities to manage price risk through improved understanding and adoption of marketing techniques.

What has been done

The Department of Agricultural Economics developed and conducted a four-week workshop series to enhance grain marketing skills. The workshop provided education to improve knowledge in basic marketing skills with a particular focus on how these skills could be applied in the biofuels era.

Results

This state-wide four-week workshop series was delivered via IP video at 27 locations and attended by over 400 producers and agribusiness professionals. The program had direct impacts on attitudes and modified marketing behavior. Over 90 percent of workshop participants said the workshops increased their comfort level in using grain marketing tools covered in the program. More importantly, the workshop had an impact on producers' future grain marketing programs. When asked if they would change the way they market grain as a result of the program, over 30 percent of the participants said they would definitely change and an additional 64 percent of the participants said they may change the way they market their grain.

4. Associated Knowledge Areas

KA Code	Knowledge Area
604	Marketing and Distribution Practices

Outcome #2

1. Outcome Measures

Number of Indiana farmers who increase the use of commodity markets and marketing contracts to reduce price risk and increase profitability

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	218

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
604	Marketing and Distribution Practices

Outcome #3

1. Outcome Measures
Percentage increase in the productivity and profitability of Indiana farms

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

As farms continue to grow in size, the management team also increases in size. In many cases, the management team becomes multi-generational as a daughter or son elects to join the family business. Research indicates that only 42% of small business owners develop a business plan. Of those using a plan, 69% say it is a major contributor to their success. As the baby boomer farmer generation begins to retire, the importance of developing the next generation of management is increasing.

What has been done

Purdue University agricultural economists conducted a workshop that provided information on communications, financial management, the characteristics of various types of legal business structures, and explored answers to legal questions. There was an opportunity for current managers to work with a daughter, son, or unrelated partner to develop a plan together for the future of the farming business.

Results

The workshop challenged participants to 1) develop a plan for effective business communication, 2) create a shared vision for the future of the business, 3) determine if resources are adequate, 4) define the role of each management team member, and 5) identify the steps to implement a management succession plan.

Selected comments included: Purdue introduced us to some great resources in their staff." "Job descriptions - let everyone know what is expected and avoid conflicts." "The notebook and other materials will provide much information in the coming months/years." "Emphasis on communication among family members. Importance of all persons discussing. Suggested business structures." All very good. Sure makes everyone think and question if they want to or can farm together." "Great program. More farm families should attend."

4. Associated Knowledge Areas

KA Code	Knowledge Area
604	Marketing and Distribution Practices

Outcome #4

1. Outcome Measures

Number of farm and commodity organization members who increase their knowledge of the potential economic impacts of alternative farm commodity program provisions such as implications for exports, domestic utilization and price, farm income, and government farm program expenditures

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	520

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
610	Domestic Policy Analysis

Outcome #5

1. Outcome Measures

Number of research-based studies, publications, and reports for policy organization members and legislators on the consequences of their international trade and farm commodity program choices in Farm Bill and related federal legislation

2. Associated Institution Types

•1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	53

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
606	International Trade and Development
610	Domestic Policy Analysis

Outcome #6

1. Outcome Measures
Provide research-based analysis of trade liberalization and market-oriented policies to guide government policy-makers as they draft appropriate legislation to increase the competitiveness of U.S. agriculture in a global market

2. Associated Institution Types

•1862 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	25

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

This research examined international agricultural trade and through the use of economic models. The focus was on trade liberalization by developing countries under WTO commitments, bilateral trade agreements and structural adjustment programs, including institutional reforms, and their consequences for trade and development outcomes. Impacts on U.S. agricultural trade, national welfare and farmer income were evaluated for developing countries in Africa and Asia.

What has been done

This research examined:

1. Effects of trade policies and institutional reform on trade, economic growth and poverty alleviation, focusing on investment and labor markets, and on past bilateral agreements.

2. Effects of changing trade policies and structural reform on cotton and cocoa trade on African farmers and U.S. interest groups.

3. Implications of U.S. agricultural policy reforms in the context of existing and future WTO commitments, especially with developing country markets.

Results

This trade research has involved interactions with and input to USDA, USAID, and USTR. Policymakers in Vietnam, Mali and Burkina Faso have also been involved in this ongoing research. Presentations have been made in the U.S. and overseas to academics and policy makers. New methodologies for assessing trade liberalization impacts have been developed in this research, as well.

4. Associated Knowledge Areas

KA Code	Knowledge Area
606	International Trade and Development

Outcome #7

1. Outcome Measures

Number of agribusiness firms, private investors, commodity organization leaders, and government officials who increase their knowledge of the economic potential to increase the number and size of new and current value-added agricultural industries such as grain and livestock processing.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	275

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
603	Market Economics
602	Business Management, Finance, and Taxation

Outcome #8

1. Outcome Measures

Increase by 5% annually the number of new value-added agricultural associated small businesses in Indiana

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #9

1. Outcome Measures

Increase gross farm income of Indiana farmers by generating additional market opportunities for grain, livestock, and specialty crops

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	1182

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management

Outcome #10

1. Outcome Measures

Number of bankers and farmers who increased their knowledge of agricultural finance and risk management

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	65

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #11

1. Outcome Measures

Number of farm women who increase their business knowledge

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	148

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Farm women have diverse backgrounds. Some women are well prepared to run a farm business. Other farm women come into the farming operations by way of marrying men who happen to be farmers, or by means of their spouse or family members dying and leaving them in charge. Annie's Project provides farm women with an understanding of the risk management components of farming.

What has been done

Six consecutive Monday nights in February and March were scheduled. The class syllabus included the following topics: Real Colors Personality Assessment, Estate Planning, Insurance, Farm Safety, Financial Documentation, Business Planning, FAST Tools, Grain Marketing, and USDA Programs. Meals for each of the 6 class meetings were coordinated and sponsors obtained to cover expenses. Registration materials were distributed to potential class participants.

Results

Nine women participated in the six sessions. Results from an evaluation administered at the end of the last class were (using a scale of 1-5, with 1 being lowest and 5 highest):

- Average score of 4.3 for Real Colors
- Average score of 4.1 for Women and Money
- Average score of 4.0 for Marketing Plans
- Average score of 4.4 for FAST Tools
- Average score of 4.1 for Business Plans
- Average score of 4.3 for overall program

Participant Testimonials:
"I enjoyed trying to figure out better management skills. I am looking forward to the future and I want to succeed."

"I believe I will be better prepared to help with financial decisions."

"I changed my mind about some of the ways I want to run the farm. I want to be organized and truly "know" the farm--in and out."

"I now understand that I am not alone being a woman in farming."

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #12

1. Outcome Measures

Number of attorneys and tax accountants who increased their knowledge of tax law and estate planning

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	1282

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #13

1. Outcome Measures

Number of people more aware of agritourism opportunities

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	349

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programatic Challenges
- Other (Diffusion of new technology)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Comparison between locales where the program operates and sites without program intervention
- Other (periodic assessment of policy)

Evaluation Results

Key Items of Evaluation

Program #3

V(A). Planned Program (Summary)

1. Name of the Planned Program

Agricultural, Natural Resources, and Biological Engineering

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
401	Structures, Facilities, and General Purpose Farm Supplies	19%		19%	
402	Engineering Systems and Equipment	27%		27%	
403	Waste Disposal, Recycling, and Reuse	38%		38%	
404	Instrumentation and Control Systems	9%		9%	
405	Drainage and Irrigation Systems and Facilities	7%		7%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	5.9	0.0	15.5	0.0
Actual	17.5	0.0	30.1	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
650124	0	486762	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
732607	0	549517	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
82483	0	1682735	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•Energy workshops and educational programs were conducted throughout the state that involve key research scientists ranging from chemical engineers to logistics experts to economists

•A team of scientists including experts in animal nutrition, soil fertility, and farm management conducted research and worked with farmers to reduce water pollution, especially phosphorus

•Food safety experts, along with microbiologists and nanotechnology experts, worked on developing sensors that will enhance food safety and risks from bioterrorism

•Livestock facilities were designed and analyzed to determine optimal nutrient management systems from an environmental and cropping systems perspective

•Electro-hydraulic sensors and off-road machine operation systems were designed and tested.

•Scientists monitored air quality of selected concentrated livestock systems on farms in multiple states to facilitate the determination of science-based EPA regulatory standards.

•Teams of experts have come together to research and address concerns surrounding CAFOS. The goal is to provide consumers, producers, and community leaders the information to make well-informed decisions regarding issues related to the expansion of animal agriculture within the state. Teams have been exploring and addressing environmental, social, economic, and public health issues related to CAFOs. A public web site with numerous publications describing research efforts is now available.

2. Brief description of the target audience

•Indiana livestock producers, especially those managing confined feeding operations

•Crop farmers interested in applying animal wastes to enhance yields and reduce water pollution

•Stakeholders in the bio-energy industry including Country Mark Cooperative, Indiana State Department of Agriculture, Indiana Soybean Alliance, Indiana Corn Growers, grain processors such as ADM, Cargill, and Tate & Lyle

•Officials with federal (EPA) and state (IDEM) regulatory agencies

•Off-road farm and industrial equipment manufacturers will be contacted and offered patent licensing opportunities as sensors for machine operation and maintenance are developed and tested

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	5000	40000	2500	5000
2007	38782	174012	18869	10434

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	3
2007 :	5

Patents listed

* Peptide Silane Material
* Structures for Integral Sensing Capability
* Detecting Multiple markers in a Test Tube or on Cell Surfaces
* Electroporative Flow Cytometry
* In Silico Biological Sensing Array for Multianalysis Detection

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	164

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of educational workshops and seminars on nutrient management and air quality

Year	Target	Actual
2007	500	13

Output #2

Output Measure

- Number of research-based educational programs on bio-fuel production, distribution, and policy

Year	Target	Actual
2007	25	25

Output #3

Output Measure

- Number of websites and publications developed

Year	Target	Actual
2007	200	164

Output #4

Output Measure

- Number of patents applied for and licensing arrangements entered into with off-road farm and industrial equipment manufactu

Year	Target	Actual
2007	5	8

Output #5

Output Measure

- Number of farm and rural safety and health programs

Year	Target	Actual
2007	{No Data Entered}	22

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of producers who increase awareness and knowledge concerning science-based methods to manage animal wastes so as to minimize potential soil and air pollution
2	Percent reduction in environmental pollution from inappropriate application of animal wastes to soils or emission of animal odors from production facilities
3	Percentage change in number of farmers who enhance soil fertility and reduce soil pollution through less reliance on commercial fertilizer and increased reliance on properly applied animal waste
4	Number of energy producers, farmers, and consumers who increase their knowledge of the technical and economic implications of increased use of Indiana produced corn and soybeans in bio-fuels
5	Number of technologies developed and disseminated that will increase the efficiency of bio-fuel production
6	Percent increase in the use of Indiana produced corn and soybeans in bio-fuels
7	Number of farmers who increase their knowledge of livestock building designs that are energy efficient as well as more animal welfare friendly
8	Optimize livestock welfare through the design of efficient and animal sensitive farm structures
9	Percentage increase in total livestock production and farmer profitability through the adoption of building designs that are energy efficient as well as more animal welfare friendly
10	Design livestock facilities that minimize odor emissions and potential air pollution
11	Number of students with increased awareness and knowledge of energy and water conservation and food safety
12	Number of Amish farmers with increased awareness of farm safety and health
13	Number of turfgrass specialists with increased knowledge of nutrient and soil management

Outcome #1

1. Outcome Measures

Number of producers who increase awareness and knowledge concerning science-based methods to manage animal wastes so as to minimize potential soil and air pollution

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	29

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse

Outcome #2

1. Outcome Measures

Percent reduction in environmental pollution from inappropriate application of animal wastes to soils or emission of animal odors from production facilities

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

To meet the ever-increasing demands for food and prevent environmental degradation, as educators and researchers, our role is to focus on the conservation and protection of natural resources; including water, land, and air, and to promote research that supports biodiversity. This effort was devoted to modeling the agricultural and biological processes that use state-of-the-art numerical methods to better utilize our natural resources for economic and environmental sustainability.

What has been done

The finite element method and Geographic Information System tools were used as a decision support system to improve management of natural resource systems. Laboratory and field experiments were used to better understand the overlaying processes and to evaluate these models as a means to assess silvopastoral, water quality, and hydrologic system management at field scales.

Results

A comprehensive effort developed the GRAzing SImulation Model (GRASIM) to examine water, nutrient, and carbon flows in pasture environments. GRASIM is the first comprehensive grazing model, and is currently used by several U.S. and international institutions to optimize production while minimizing environmental impacts. A new soil and water characterization and flow model (Kamel) allows for improved field water management, more accurate predictions of contaminant transport and transfer, incorporation of overburden pressure, and provides for a systematic procedure for up-scaling the pedostructure processes to the pedon, field, and watershed scales.

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse

Outcome #3

1. Outcome Measures

Percentage change in number of farmers who enhance soil fertility and reduce soil pollution through less reliance on commercial fertilizer and increased reliance on properly applied animal waste

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse

Outcome #4

1. Outcome Measures

Number of energy producers, farmers, and consumers who increase their knowledge of the technical and economic implications of increased use of Indiana produced corn and soybeans in bio-fuels

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	915

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

For the general public, an increased awareness about what esters are and are not; about the utility of alternative feedstocks (winter canola, yellow mustard, sunflower) for the economical production of methyl esters; and esters' multiple uses (biodiesel, home heating, solvents) including glycerin derivatives are all important to understand.

What has been done

Presentations were made over 85 high school students throughout Indiana.

Results

The participants were asked to indicate their level of understanding before and after the program on the following questions:

1. Your general knowledge of biodiesel.
2. Your knowledge of the differences between esters, B2, B20, vegetable oil, ethanol, E-85, diesel and gasoline.
3. Your knowledge of what it takes to make biodiesel.

Virtually all participants showed an increase in knowledge gained in each category.

When asked: "Do you feel comfortable enough to try and use biodiesel?"; over 80% of all participants answered "yes."

When asked: "What are you going to do differently as a result of what you learned today?"; the responses included "buy biodiesel" to "think about how much gas I am using".

When asked: "Who are you going to share this information with?"; the responses varied from: "everyone" to "my boss" to "my friends."

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment

Outcome #5

1. Outcome Measures

Number of technologies developed and disseminated that will increase the efficiency of bio-fuel production

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

To become more cost effective it is critical to decrease the costs of transforming agricultural residues to ethanol and bioproducts.

What has been done

A survey of the literature helped identify several promising technologies to achieve cost effective preprocessing (pretreatment) of corn residue to make it easier to convert to ethanol.

Results

Application of various pretreatments, combined with fermentation of the resulting sugars to produce cellulosic ethanol is being addressed. Since different feedstocks behave differently for various types of pretreatments, this research project, carried out in cooperation with other universities, is mapping the science and the engineering of pretreatments for feedstocks which may be used for producing cellulose ethanol. These feedstocks currently include poplar trees and switchgrass.

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment

Outcome #6

1. Outcome Measures
Percent increase in the use of Indiana produced corn and soybeans in bio-fuels

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area

402	Engineering Systems and Equipment

Outcome #7

1. Outcome Measures

Number of farmers who increase their knowledge of livestock building designs that are energy efficient as well as more animal welfare friendly

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
401	Structures, Facilities, and General Purpose Farm Supplies

Outcome #8

1. Outcome Measures

Optimize livestock welfare through the design of efficient and animal sensitive farm structures

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
401	Structures, Facilities, and General Purpose Farm Supplies

Outcome #9

1. Outcome Measures

Percentage increase in total livestock production and farmer profitability through the adoption of building designs that are energy efficient as well as more animal welfare friendly

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
401	Structures, Facilities, and General Purpose Farm Supplies

Outcome #10

1. Outcome Measures

Design livestock facilities that minimize odor emissions and potential air pollution

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	5	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
401	Structures, Facilities, and General Purpose Farm Supplies

Outcome #11

1. Outcome Measures
Number of students with increased awareness and knowledge of energy and water conservation and food safety

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	300

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse

Outcome #12

1. Outcome Measures

Number of Amish farmers with increased awareness of farm safety and health

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	300

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment

Outcome #13

1. Outcome Measures

Number of turfgrass specialists with increased knowledge of nutrient and soil management

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	900

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparison between locales where the program operates and sites without program intervention
- Other (hits and use of web site)

Evaluation Results

Key Items of Evaluation

Program #4

V(A). Planned Program (Summary)

1. Name of the Planned Program

Food and Non-Food Products: Development, Processing, Quality, and Delivery

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies	31%		31%	
502	New and Improved Food Products	22%		22%	
503	Quality Maintenance in Storing and Marketing Food Products	18%		18%	
504	Home and Commercial Food Service	2%		2%	
511	New and Improved Non-Food Products and Processes	25%		25%	
512	Quality Maintenance in Storing and Marketing Non-Food Pro	2%		2%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	3.5	0.0	14.5	0.0
Actual	8.9	0.0	21.5	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
248492	0	429610	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
319886	0	484997	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
71394	0	843897	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- conducted research
- developed programs and conduct workshops
- developed extension curricula
- provided outreach training programs
- established distance education programs and web-based programs
- coordinated meetings with important stakeholders (researchers, industry, farmers, regulatory, etc.)
- worked with media

2. Brief description of the target audience

There are a wide variety of target audiences including:

- •Farmers
- •Animal production personnel
- •Plant production personnel
- •Biofuels processing industry personnel
- •Food manufacturing and processing plant personnel
- •Non-food manufacturing plant personnel
- •Professional engineers
- •State and county health departments
- •Federal regulatory officials
- •State industry associations

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	1000	10000	100	1000
2007	3758	2337	14563	345

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	1
2007 :	8

Patents listed

* Biobased Hydrophobic Surface Treatment Agent for Porous Materials
* Adjustable Rocking Chair
* A Process to Prepare Enzymatically Modified Starch
* Enzymatically Modified Starch to Extend the Bowl-life of Cereals
* New Process to Produce Maltose from Starch
* Method of Making Water-Soluble Maltodextrins with Glycemic Index
* Fiberization and Densification of Agriculture Waste and Their Utilizations Thereafter
* Construction of Carbohydrate-Based Self-Assembling Nanoshell Encapsulation for Biofactor-Triggered Controlled Release

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of programs offered to farmers or production agriculture specialists

Year	Target	Actual
2007	10	35

Output #2

Output Measure

- Number of programs offered to the food industry

Year	Target	Actual
2007	10	41

Output #3

Output Measure

- Number of programs offered to the non-food industry

Year	Target	Actual
2007	5	33

Output #4

Output Measure

- Number of research projects on bioprocessing

Year	Target	Actual
2007	5	12

Output #5

Output Measure

- Number of research projects on air quality

Year	Target	Actual
2007	3	1

Output #6

Output Measure

- Number of research projects on wood science and technology

Year	Target	Actual
2007	3	0

Output #7

Output Measure

- Number of research projects on grain storage and processing

Year	Target	Actual
2007	5	15

Output #8

Output Measure

- Number of research projects related to dairy products

Year	Target	Actual
2007	3	5

Output #9

Output Measure

- Number of research projects related to aquaculture products

Year	Target	Actual
2007	3	7

Output #10

Output Measure

- Number of research projects related to enology and viticulture

Year	Target	Actual
2007	{No Data Entered}	14

Output #11

Output Measure

- Number of research projects related to food processing

Year	Target	Actual
2007	{No Data Entered}	11

Output #12

Output Measure

- Number of research projects related to food quality

Year	Target	Actual
2007	{No Data Entered}	6

Output #13

Output Measure

- Number of workshops offered to the general public

Year	Target	Actual
2007	{No Data Entered}	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of persons gaining knowledge in bioprocessing
2	Number of products produced using new bioprocessing technologies
3	Increased number of new products produced by new bioprocessing, bioenergy, and biotechnology
4	Increased efficiency (%) with new bioprocessing techniques
5	Number of persons gaining knowledge in food processing and food processing automation
6	Numbers of persons or companies adopting new food automation technologies
7	Increased % use of food and non-food automation technologies
8	Number of persons gaining knowledge in wood science and wood technologies
9	Numbers of persons and companies involved in new wood technologies
10	Increased % production of furniture and other wood products
11	Number of persons gaining knowledge in air quality control systems
12	Number of farming operations using air quality control systems
13	Numbers of animal production facilities adopting better air quality practices
14	Increased air quality % in production facilities
15	Number of persons gaining knowledge in grain processing
16	Numbers of persons and companies adopting better grain processing practices
17	Increased % yield of higher quality grain products
18	Number of persons gaining knowledge in enology and viticulture
19	Number of persons gaining knowledge of government programs
20	Number of persons gaining knowledge of marketing trends
21	Number of persons gaiing knowledge on food packaging applications

Outcome #1

1. Outcome Measures

Number of persons gaining knowledge in bioprocessing

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	735

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
511	New and Improved Non-Food Products and Processes

Outcome #2

1. Outcome Measures

Number of products produced using new bioprocessing technologies

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	13

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Currently there is a poor understanding of the extent to which water-solid interactions in powdered food and premix systems will impact stability and markers of bioavailability for beneficial bioactive compounds. However, these traits are critical for successful development of formulations that maximize the physiological impact of the bioactive ingredients.

What has been done

We have introduced the concept of deliquescence lowering to food science and showed that powder blends of highly water-soluble organic materials (including sugars, salts, organic acids, and vitamins) undergo deliquescence lowering, which can lead to both enhanced chemical reactivity and powder caking. Analytical techniques are being adapted to determine effects of water-solid interactions on the stability, release, and subsequent bioaccessibility of ingredients in food systems.

Results

The results from this work are currently being used in the food processing industry to develop appropriate formulation, processing, packaging, and storage conditions to maintain product quality and deliver optimal bioactivity of ingredients.

4. Associated Knowledge Areas

KA Code	Knowledge Area
511	New and Improved Non-Food Products and Processes

Outcome #3

1. Outcome Measures

Increased number of new products produced by new bioprocessing, bioenergy, and biotechnology

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	2	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
511	New and Improved Non-Food Products and Processes

Outcome #4

1. Outcome Measures

Increased efficiency (%) with new bioprocessing techniques

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
511	New and Improved Non-Food Products and Processes

Outcome #5

1. Outcome Measures
Number of persons gaining knowledge in food processing and food processing automation

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	1140

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Due to the increase in food safety, food quality, and food defense concerns, the Indiana meat, poultry and egg products industry must comply with state and federal regulations.

What has been done

The Food Science Department, in cooperation with the Indiana State Poultry Association, conducts a Hazard Analysis Critical Control Point (HACCP) Roundtable twice a year. This roundtable is a one-day program to share ideas on food processing practices in meat, poultry, and egg processing establishments. This program provides a forum for the food processing industry and regulatory personnel to meet and discuss hot topics related to food safety, processing trends, and regulatory compliance.

Results

These HACCP roundtables are opportunities for Indiana meat, poultry, and egg processors to meet with representatives from federal and state government inspection programs where questions on HACCP and food processing can be discussed. These roundtables are held twice annually with an average of 15 companies attending. It has been estimated these meetings result in a cost savings of approximately $2 million dollars per year for Indiana meat, poultry and egg processors.

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies

Outcome #6

1. Outcome Measures

Numbers of persons or companies adopting new food automation technologies

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	220

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies

Outcome #7

1. Outcome Measures

Increased % use of food and non-food automation technologies

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies

Outcome #8

1. Outcome Measures

Number of persons gaining knowledge in wood science and wood technologies

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
511	New and Improved Non-Food Products and Processes

Outcome #9

1. Outcome Measures

Numbers of persons and companies involved in new wood technologies

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
511	New and Improved Non-Food Products and Processes

Outcome #10

1. Outcome Measures
Increased % production of furniture and other wood products

2. Associated Institution Types

•1862 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
511	New and Improved Non-Food Products and Processes

Outcome #11

1. Outcome Measures
Number of persons gaining knowledge in air quality control systems

2. Associated Institution Types

•1862 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
512	Quality Maintenance in Storing and Marketing Non-Food Products

Outcome #12

1. Outcome Measures
Number of farming operations using air quality control systems

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
512	Quality Maintenance in Storing and Marketing Non-Food Products

Outcome #13

1. Outcome Measures

Numbers of animal production facilities adopting better air quality practices

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
512	Quality Maintenance in Storing and Marketing Non-Food Products

Outcome #14

1. Outcome Measures

Increased air quality % in production facilities

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area

512	Quality Maintenance in Storing and Marketing Non-Food Products

Outcome #15

1. Outcome Measures

Number of persons gaining knowledge in grain processing

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	5500

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies

Outcome #16

1. Outcome Measures

Numbers of persons and companies adopting better grain processing practices

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	840

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies

Outcome #17

1. Outcome Measures

Increased % yield of higher quality grain products

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies

Outcome #18

1. Outcome Measures

Number of persons gaining knowledge in enology and viticulture

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	1400

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Indiana now has a vibrant wine industry. Between 1991 and 2007, 28 new wineries opened statewide, bringing the total to 36. As wine grape production has increased in Indiana, growers and vintners are demanding information on new grape cultivars, pest management, winemaking techniques and marketing strategies.

What has been done

The Purdue Wine Grape Team conducts research and extension in viticulture and enology. Professional training workshops, seminars and tastings are designed to engage the industry several times each year. The Purdue Wine Team hosts the Vintage Indiana festival that attracts more than 10,000 wine lovers to Indianapolis. In cooperation with the Indiana State Fair, the Indy International Wine Competition attracts more than 3,300 entries from around the world.

Results

Wine grape and wine production is the fastest growing segment of Indiana value-added agriculture and agritourism. The Purdue Wine Grape Team supports the wine industry through extension, research, marketing and promotion activities. Through Purdue's engagement, Indiana's wine grape acreage has increased from 55 acres to over 400 acres in the past ten years, with more wineries and acreage planned. Wine production surpassed 700,000 gallons a year in 2007, a 17-fold increase since the Purdue Wine Grape Team began its efforts in 1990. Indiana wine sales have grown by more than 15 percent every year. The Purdue Wine Grape Team provides extension leadership for viticulture and enology programs nationwide. Our wineries are the number one agritourism destination in the state of Indiana with hundreds of thousands of visitors annually, while wine has emerged as a prime example of a value-added agricultural commodity made in Indiana.

4. Associated Knowledge Areas

KA Code	Knowledge Area
502	New and Improved Food Products

Outcome #19

1. Outcome Measures

Number of persons gaining knowledge of government programs

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	48

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies

Outcome #20

1. Outcome Measures

Number of persons gaining knowledge of marketing trends

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	64

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products

Outcome #21

1. Outcome Measures

Number of persons gaiing knowledge on food packaging applications

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	180

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)
- Other (State & National Priorities)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

Key Items of Evaluation

Program #5

V(A). Planned Program (Summary)

1. Name of the Planned Program

Family Well-Being

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
801	Individual and Family Resource Management	26%		26%	
802	Human Development and Family Well-Being	74%		74%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	4.0	0.0	4.0	0.0
Actual	13.8	0.0	10.8	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
262386	0	99509	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
546148	0	112338	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
189175	0	719511	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Conducted workshops
- Provided training
- Developed web-based and distance educational materials
- Worked with the media
- Conducted research
- Created Displays
- Collaborated with other agencies

2. Brief description of the target audience

•immigrants
•welfare-to-work individuals
•job loss individuals
•youth
•adults
•limited resource families
•farm families
•families in divorce
•child care professionals
•trainers of child care professionals
•policy makers
•parents
•volunteers that work with parents
•elder caregivers
•adult children
•retirement associations
•community leaders
•planners

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	38800	157400	19100	72600
2007	105278	2159838	17616	105278

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	1	1	28

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of staff development opportunties for Extension Educators

Year	Target	Actual
2007	5	15

Output #2

Output Measure

- Number of programs offered to parents, childcare providers, youth, adults, low-wealth households and consumers

Year	Target	Actual
2007	50	1100

Output #3

Output Measure

- Number of research projects

Year	Target	Actual
2007	3	26

Output #4

Output Measure

- Number of publications

Year	Target	Actual
2007	2	30

Output #5

Output Measure

- Number of web sites developed

Year	Target	Actual
2007	0	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of participants who increased their knowledge of debt management
2	Number of participants who adopted one or more practices to reduce debt
3	Number of participants reporting decreased debt
4	Number of participants who increased their knowledge of the benefits of saving on a regular basis
5	Number of participants who increased the amount of money they save regularly
6	Number of participants who save regularly
7	Number of participants who increased their knowledge of basic personal financial management
8	Number of participants who have established financial goals to guide financial decisions
9	Number of participants who develop a plan for achieving financial security
10	Number of participants who report increased financial security
11	Number of participants who increased their knowledge of childcare and how to manage care giving roles and responsibilities
12	Number of participants who increased their knowledge of decision making skills necessary to make quality of life decisions for caregivers and receivers
13	Number of child care professionals who are working toward or who have obtained the Child Development Accreditation
14	Increased number of child care slots
15	Increased number of child care professional positions
16	Increase in number of quality and affordable child care facilities
17	Number of participants who increased their knowledge of basic parenting skills
18	Number of participants reporting improved parent-child communication
19	Number of participants reporting significant improvement in satisfaction and quality of parent-child relationships

Outcome #1

1. Outcome Measures

Number of participants who increased their knowledge of debt management

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	1495

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #2

1. Outcome Measures

Number of participants who adopted one or more practices to reduce debt

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	744

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #3

1. Outcome Measures

Number of participants reporting decreased debt

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #4

1. Outcome Measures

Number of participants who increased their knowledge of the benefits of saving on a regular basis

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	2238

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #5

1. Outcome Measures

Number of participants who increased the amount of money they save regularly

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	467

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #6

1. Outcome Measures

Number of participants who save regularly

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	250	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #7

1. Outcome Measures

Number of participants who increased their knowledge of basic personal financial management

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	4241

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Every day we make decisions about how we spend our money. The way we spend or save money today determines our current financial stability and future financial security. Many Americans spend more than their incomes on a regular basis.

What has been done

Managing money takes skills that are learned. A group of educators developed the Where Does Your Money Go? program to get consumers to understand how current money management practices affect financial security and to increase consumers' knowledge of money management practices that can lead to financial control. The practices include tracking expenses, identifying spending leaks, distinguishing between wants and needs, and developing a savings-spending plan.

Results

332 Where Does Your Money Go? participants completed evaluations. Participants said they learned the difference between needs and wants (56%), what their spending leaks are (80%), how to develop a spending-savings plan (80%), and how to track their expenses using the envelope method (86%). Nine of ten participants said they were thinking differently about how they manage their money after the workshop. One participant wrote, "I guess although I was already aware of the spending leaks, I hadn't thought about how that fit into larger goals in the long run." Participants reported that they planned to try several money management techniques discussed during the session. 56% said they were going to try techniques related to identifying needs and wants, 73% were going to try techniques related to developing a spending-savings plan, 79% were going to try techniques related to reducing spending leaks, and 80% were going to try techniques related to tracking expenses.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #8

1. Outcome Measures

Number of participants who have established financial goals to guide financial decisions

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	694

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #9

1. Outcome Measures

Number of participants who develop a plan for achieving financial security

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	501

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #10

1. Outcome Measures

Number of participants who report increased financial security

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	250	252

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management

Outcome #11

1. Outcome Measures

Number of participants who increased their knowledge of childcare and how to manage care giving roles and responsibilities

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	5252

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There were 311,655 children under age 6 in Indiana whose parents had jobs and needed quality child care. Child care providers and lead teachers in Indiana are required to obtain the Child Development Associate Credential in order to meet state licensing regulations. Providers work long hours (usually 6 a.m. to 6 p.m.) and need easy access to classes. Having CDA training available in their local communities is a high priority for child care providers needing this nationally-recognized credential.

What has been done

Purdue Extension provided 120 classroom hours of CDA Credential training plus advising for child care providers from 16 Indiana counties in preparation for the national CDA assessment. Several of the counties involved were rural and did not have access to other formal CDA training. Class topics included: safety, health, learning environment, physical, cognitive, communication, creative, self, social, guidance, families, program management and professionalism.

Results

A total of 78 CDA candidates participated in CDA classes and advising. Their training impacted 1,086 children in their direct care and potentially impacted a total of 5,375 children at the providers,' sites. A 5-question, open-ended evaluation instrument was administered at the beginning of each class based on the previous class instruction and experience. Content analysis of the returned self-report evaluations indicated that the CDA classes significantly influenced candidates who received the training including improved professional view of themselves, and more positive interactions and behaviors with young children.
Pre-and post-tests based on specific curriculum content were administered as well at the beginning and end of each topic area studied. Five topic areas showed on average a statistically significant mean difference from pre-to post-tests (health, physical, social, program management, and professionalism).

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #12

1. Outcome Measures

Number of participants who increased their knowledge of decision making skills necessary to make quality of life decisions for caregivers and receivers

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	1318

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #13

1. Outcome Measures

Number of child care professionals who are working toward or who have obtained the Child Development Accreditation

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	92

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #14

1. Outcome Measures

Increased number of child care slots

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	15

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #15

1. Outcome Measures

Increased number of child care professional positions

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	22

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #16

1. Outcome Measures

Increase in number of quality and affordable child care facilities

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	5	13

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #17

1. Outcome Measures

Number of participants who increased their knowledge of basic parenting skills

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	8510

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

According to the 2000 U.S. Census, there were 1,730,878 households in Indiana with children. There were 87,088 births and 1,577,629 children (preschool to age 17). Many parents want and need concise, timely, and up-to-date information about parenting. Finding reliable, research-based information from a trusted, non-biased source can be difficult, time-consuming, and expensive.

What has been done

News Notes to Parents was developed as an educational tool for parents of young children (ages 3-7) with a focus on enhancing positive parenting skills. The four-page newsletter addresses such topics as: parenting, nutrition, health and wellness, child development, family communication, and balancing of work and family. The editorial content covers a variety of topics from month to month. Research-based information for the newsletter comes from Purdue University and other trusted resources.

Results

The newsletter was distributed electronically to nine Indiana counties in Extension Area XI and was customized for each county. Distribution included family and child care center providers, Head Start, Even Start, Mentor Moms, Healthy Families, Division of Family and Children, Boys and Girls Clubs, WIC Centers, YWCA centers, public and parochial schools, preschools, and public libraries. A total of 8,929 newsletters were distributed per month, 76,864 issues for the year,throughout northeastern Indiana.
A checklist evaluation was randomly inserted into a monthly issue for readers to provide feedback about the benefits of the newsletter. Of the 145 respondents, 89% reported increased awareness of nutrition, health, and safety; 69% reported greater insight into the developmental stages of children; 84% better understood their role as a parent; and 73% helped to establish "family" as a priority.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #18

1. Outcome Measures

Number of participants reporting improved parent-child communication

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	1467

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #19

1. Outcome Measures
Number of participants reporting significant improvement in satisfaction and quality of parent-child relationships

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	1307

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. **Evaluation Studies Planned**
   - After Only (post program)
   - Before-After (before and after program)

Evaluation Results

Key Items of Evaluation

Program #6

V(A). Planned Program (Summary)

1. Name of the Planned Program

Human Nutrition, Food Safety and Human Health and Well-Being

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
701	Nutrient Composition of Food	1%		1%	
702	Requirements and Function of Nutrients and Other Food Cor	30%		30%	
703	Nutrition Education and Behavior	11%		11%	
711	Ensure Food Products Free of Harmful Chemicals, Including	7%		7%	
712	Protect Food from Contamination by Pathogenic Microorgani	28%		28%	
721	Insects and Other Pests Affecting Humans	7%		7%	
723	Hazards to Human Health and Safety	16%		16%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	15.5	0.0	53.5	0.0
Actual	14.6	0.0	27.7	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
501781	0	521487	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
601699	0	588719	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
99918	0	1184127	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research-based programs focused on conducting research experiments and programs emphasizing our key interest areas including

- •detection and control of foodborne pathogens,
- •effects of diet and nutrition on human health,
- •beneficial effects of nutrition, functional foods and biomedical research, and
- •nutritional impact on chronic diseases including diabetes, heart disease, and obesity

A wide variety of programs were delivered to our targeted audiences. Our output effort included:

- •partnering with important stakeholders
- •development of workshop materials and curricula
- •conducting workshops
- •development of web-based and distance education materials
- •working with the media

Most programs involved some type of collaboration or partnerships with our stakeholders, with industry, with consumers, or with regulatory agencies. Evaluation tools vary greatly depending on the intended audience and program type ranging from surveys, to pre-and post test, to national certification exams, and intensive follow up surveys to better assess knowledge gain.

2. Brief description of the target audience

There were a wide variety audiences including:

- · Animal production personnel
- · Plant production personnel
- · Food manufacturing and processing plant personnel
- · The transportation industry
- · Foodservice and food retail workers
- · Consumers
- · Healthcare
- · Day care
- · Nursing homes
- · Youth
- · State and county health departments
- · Federal regulatory officials
- · State industry associations
- · First Responders

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	3000	20000	300	2000
2007	76125	3269656	62532	152192

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	2
2007 :	2

Patents listed

* Improved Methods and Reagents for Labeling, Isolating and Quantifying Proteins
* Label Free DNA Detection Using Electrical Measurements

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	138	6	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of programs offered to consumers

Year	Target	Actual
2007	100	8549

Output #2

Output Measure

- Number of programs offered to the food industry

Year	Target	Actual
2007	100	185

Output #3

Output Measure

- Number of research projects on food safety, human nutrition, and health

Year	Target	Actual
2007	25	74

Output #4

Output Measure

- Number of nutrition related research publications

Year	Target	Actual
2007	4	138

Output #5

Output Measure

- Number of research publications related to detection of foodborne pathogens

Year	Target	Actual
2007	5	21

Output #6

Output Measure

- Number of research publications related to control of foodborne hazards

Year	Target	Actual
2007	4	10

Output #7

Output Measure

- Number of research publications related to food defense and protection

Year	Target	Actual
2007	2	7

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of persons who increased their knowledge of proper hand washing
2	Number of persons who increased their knowledge of cooking foods adequately
3	Number of persons who increased their knowledge of avoiding cross-contamination
4	Number of persons who increased their knowledge of keeping food at a safe temperature
5	Number of persons who increased their knowledge of storing foods properly
6	Number of participants passing food handler certificate
7	Number of participants entering or being retained in the food service workforce as a result of training
8	Decreased % incidence of food borne illness associated with unsafe food handling practices
9	Decreased % mortality due to unsafe food handling practices
10	Number of persons who increased their knowledge of the connection between food choices and risk of chronic disease.
11	Number of persons who increased their knowledge of selection and preparation of foods with reduced fat and/or calories
12	Number of persons who increased knowledge of USDA serving sizes
13	Number of participants consuming appropriate USDA serving sizes
14	Number of participants demonstrating ability to choose or prepare foods with reduced fat and/or calories
15	Decreased % risk factors for chronic disease (including diabetes, heart disease, obesity)
16	Decreased % chronic disease complications (including diabetes, heart disease, obesity)
17	Number of persons who increase knowledge of the relationship between nutrition and health
18	Number of persons who increased their knowledge of physical activity recommendations
19	Number of persons who adopt one or more practices to improve food choices and activity levels
20	Percentage of participants that report reduced medical costs because of changes in food choices and activity levels

Outcome #1

1. Outcome Measures

Number of persons who increased their knowledge of proper hand washing

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	16524

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxi

Outcome #2

1. Outcome Measures

Number of persons who increased their knowledge of cooking foods adequately

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	3693

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #3

1. Outcome Measures

Number of persons who increased their knowledge of avoiding cross-contamination

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	4104

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxi

Outcome #4

1. Outcome Measures

Number of persons who increased their knowledge of keeping food at a safe temperature

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	219

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety

Outcome #5

1. Outcome Measures

Number of persons who increased their knowledge of storing foods properly

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	9647

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety

Outcome #6

1. Outcome Measures

Number of participants passing food handler certificate

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	3147

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The Centers for Disease Control and Prevention estimates that 76 million cases of food borne illness occur annually in the United States and claim approximately 5,000 lives each year. Given the thousands of food service establishments in the state of Indiana, food sanitation education, to prevent the outbreak of a food borne illness is a priority. State law requires at least one person per establishment to be knowledgeable and certified in food sanitation.

What has been done

The ServSafe curriculum was adapted by Purdue Extension for restaurant establishments in the state of Indiana. Essentials of Food Safety & Sanitation is a two day course with 16 hours of instructional time taught by Extension educators using PowerPoint modules, activities, demonstrations, and concluding with an exam. Upon passing the exam, the ServSafe Food Protection Manager Certification is granted by the National Registry of Food Safety Professionals. Certification is valid for five years.

Results

As a result of the educational outreach through Purdue Extension, a total of 383 out of 433 (88%) participants successfully passed the ServSafe Food Protection Manager Certification course and exam. A three month follow-up survey indicated that participants and their staff washed hands more frequently during food preparation, kept raw foods separate from ready-to-eat foods to prevent cross contamination, and increased the amount of time the temperature was taken from food to ensure proper cooling to safe temperatures. Overall, after completing the course, food service staff were more aware that safe food practices are key strategies to reducing the risk of food borne illness to foodservice employees and the citizens of Indiana

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety

Outcome #7

1. Outcome Measures

Number of participants entering or being retained in the food service workforce as a result of training

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #8

1. Outcome Measures

Decreased % incidence of food borne illness associated with unsafe food handling practices

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety

Outcome #9

1. Outcome Measures

Decreased % mortality due to unsafe food handling practices

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
723	Hazards to Human Health and Safety

Outcome #10

1. Outcome Measures

Number of persons who increased their knowledge of the connection between food choices and risk of chronic disease.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	11901

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The number of individuals who have diabetes is growing rapidly in the state of Indiana. The Center for Disease Control and the National Institute of Health estimate that 17 million Americans have this disease and another 16 million have pre-diabetes. The number of Americans diagnosed with diabetes has increased 61% over the past decade. Annual health care costs for an individual with diabetes are estimated at $10,000 compared to $2,700 for a person without diabetes.

What has been done

Dining with Diabetes is a program to help diabetics and their families learn how to prepare meals. The program consists of four 2-hour sessions and utilizes the expertise of Extension educators in collaboration with healthcare professionals. Extension educators demonstrate several methods of preparing meals so that they are still enjoyable, but more nutritious. Participants see the food being prepared and taste several examples of common food dishes.

Results

Fifteen Extension educators presented Dining with Diabetes 22 times in 16 counties. A total of 310 Indiana residents attended the program. Fifty-eight percent of the attendees indicated they had diabetes and the others reported they were preparing meals for someone who had diabetes. There were significant increases in the participants' knowledge about diabetes according to pre/post test scores. Participants were asked about several behaviors that could affect the risk for diabetes. When participants were asked how many days a week they ate 3 or more servings of fruits and vegetables, there was a shift from 1-3 times a week toward 4-6 times a week. When participants were asked how many days a week they exercised 20 minutes or more, there was an increase from an average of 2.6 days a week before the program to 3.2 days a week after the program. The participants also indicated a significant change from using the nutrition facts label sometimes toward using the label frequently.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #11

1. Outcome Measures

Number of persons who increased their knowledge of selection and preparation of foods with reduced fat and/or calories

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	6141

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #12

1. Outcome Measures
Number of persons who increased knowledge of USDA serving sizes

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	13540

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
702	Requirements and Function of Nutrients and Other Food Components

Outcome #13

1. Outcome Measures

Number of participants consuming appropriate USDA serving sizes

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	2719

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
702	Requirements and Function of Nutrients and Other Food Components

Outcome #14

1. Outcome Measures

Number of participants demonstrating ability to choose or prepare foods with reduced fat and/or calories

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	4570

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #15

1. Outcome Measures

Decreased % risk factors for chronic disease (including diabetes, heart disease, obesity)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #16

1. Outcome Measures

Decreased % chronic disease complications (including diabetes, heart disease, obesity)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #17

1. Outcome Measures

Number of persons who increase knowledge of the relationship between nutrition and health

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	44649

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

More than half of the youth in the United States eat too much fat, too little fruits and vegetables, and consume too little calcium. Research has shown that poor nutrition can affect a child's intellectual performance. Youth establish many life long habits at an early age. Instilling proper nutrition practices in youth is key to ensuring health as adults.

What has been done

Exploring MyPyramid with Professor Popcorn (Professor Popcorn) is a curriculum for youth in grades 1-6. With the release of the 2005 Dietary Guidelines for Americans and MyPyramid, extensive revisions were made to the curriculum. Major concepts included in the curriculum have been linked to Indiana's health and science education standards. Topics include: MyPyramid; physical activity; the Dietary Guidelines for Americans; and, Fight Bac!, concepts of Clean, Separate, Cook and Chill.

Results

Extension staff taught and provided evaluation data for the Professor Popcorn program in 38 Indiana counties. In 7 counties the program was taught to grades 1-2; in 15 counties the program was taught to grades 3-4; in 5 counties the program was taught to grades 1-4; in 5 counties the program was taught to grades 3-6 and, in 10 counties all grades were taught. A total of 10,424 youth in 376 groups from 34 counties were taught the 2006 version of the curriculum: 4093 youth in 134 groups in grades 1-2; 5288 youth in 203 groups in Grades 3-4; and, 1043 youth in 39 groups in grades 5-6. In addition, 2506 youth in 43 groups from 8 counties were taught the previous version: 606 youth in grades 1-2, and 1900 youth in grades 3-6.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #18

1. Outcome Measures

Number of persons who increased their knowledge of physical activity recommendations

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	22545

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #19

1. Outcome Measures

Number of persons who adopt one or more practices to improve food choices and activity levels

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	13271

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #20

1. Outcome Measures

Percentage of participants that report reduced medical costs because of changes in food choices and activity levels

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)
- Other (State and National priorities)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- Other (Success/pass rate on regulatory)

Evaluation Results

Key Items of Evaluation

Program #7

V(A). Planned Program (Summary)

1. Name of the Planned Program

Natural Resources and Environment

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	2%		2%	
102	Soil, Plant, Water, Nutrient Relationships	26%		26%	
104	Protect Soil from Harmful Effects of Natural Elements	3%		3%	
111	Conservation and Efficient Use of Water	2%		2%	
112	Watershed Protection and Management	13%		13%	
123	Management and Sustainability of Forest Resources	14%		14%	
131	Alternative Uses of Land	9%		9%	
132	Weather and Climate	7%		7%	
133	Pollution Prevention and Mitigation	17%		17%	
135	Aquatic and Terrestrial Wildlife	7%		7%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	12.0	0.0	32.0	0.0
Actual	17.0	0.0	28.2	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
674396	0	347254	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
699891	0	392023	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
25496	0	1575992	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- •Workshops
- •Extension publications
- •Public service announcements
- •Research
- •Web site development
- •Home and farm visits
- •Displays
- •IP video programs
- •Demonstrations and field days
- •One-on-one consultations
- •Collaboration with sister agencies

2. Brief description of the target audience

- •Agricultural producers
- •Rural and urban residents
- •Elected officials and other decision-makers
- •Owners of private and public wildlands
- •Natural resource professionals
- •Technical service providers
- •Tree care providers
- •Right of way managers
- •Urban planners
- •Youth

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	23000	125000	6000	35000
2007	29735	437048	13141	4131

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	120	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of programs offered to producers, land owners, and land managers.

Year	Target	Actual
2007	100	363

Output #2

Output Measure

- Number of research projects

Year	Target	Actual
2007	25	92

Output #3

Output Measure

- Number of demonstrations and field days

Year	Target	Actual
2007	10	170

Output #4

Output Measure

- Number of publications

Year	Target	Actual
2007	100	120

Output #5

Output Measure

- K-12 classroom visits

Year	Target	Actual
2007	{No Data Entered}	34

Output #6

Output Measure

- One-on-one consultations

Year	Target	Actual
2007	{No Data Entered}	43

Output #7

Output Measure

- Number of newsletter or magazine articles written

Year	Target	Actual
2007	{No Data Entered}	6

Output #8

Output Measure

- Number of Plan Commission meetings

Year	Target	Actual
2007	{No Data Entered}	42

Output #9

Output Measure

- Number of volunteers trained

Year	Target	Actual
2007	{No Data Entered}	46

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of participants who increase knowledge of practices to protect water resources
2	Number of participants who improve decision making for use of water resources
3	Number of participants who increase knowledge of proper application of fertilizer, manure and waste products to soil and potential for environmental consequences of misapplication
4	Number of participants who increased adoption of proper application of fertilizer, manure and waste products to soil
5	Number of participants who increase knowledge of best management practices for optimal manure nutrient utilization with on- and off-site agricultural lands
6	Number of participants who adopt best management practices for optimal manure nutrient utilization with on- and off-site agricultural lands
7	Number of participants who increase knowledge of the value of ponds in landscapes and methods for installing and managing ponds
8	Number of participants who increase value of landscapes through better installation and management of ponds
9	Number of participants who increase knowledge of on-site wastewater treatment siting and maintenance needs
10	Number of participants who make more informed decisions for on-site wastewater treatment siting and maintenance
11	Percentage reduction in the number of water quality violations related to animal production and land application in the state of Indiana
12	At least 15 percent of the tree care providers in Indiana will be certified arborists.
13	Number of professional natural resource advisors who have the skills necessary to assess the health of the wildlands
14	Owners of 15 percent of wildlands will have a relationship with knowledgeable professional natural resource advisors and have developed and implemented a management plan
15	Natural resource professionals and wildland owners who have developed and implemented management plans will work with an additional 20 percent of landowners to develop and implement management plans.
16	Percentage of owners of wildlands who will have assessed the health of their lands and developed and implemented management plans
17	Number of certified arborists maintaining their certification
18	Number of landowners with knowledge of proper tree planting and management techniques
19	Number of participants who increased their knowledge of natural resource management
20	Number of participants who increased their knowledge of proper application of pesticides
21	Number of participants who increased their knowledge of topsoil importance
22	Number of participants who increased their knowledge of Indiana's diverse wildlife
23	Number of woodlot owners who improved their management skills

Outcome #1

1. Outcome Measures

Number of participants who increase knowledge of practices to protect water resources

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	19756

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Locally-led watershed management is a key statewide strategy for restoring and protecting Indiana's water resources, yet people leading local watershed projects face many challenges due to a lack of experience, knowledge, information and access to data. Coordination of resources and information, water quality and GIS data, and education.

What has been done

We developed the Indiana Watershed Leadership Academy (www.purdue.edu/watersheds) to respond to the need to build watershed management capacity. In the first two years, 54 emerging watershed leaders have participated in this challenging five-month program. The program combines 5 days of face-to-face learning and networking with distance education. Those who completed all requirements received a Professional Certificate of Watershed Management.

Results

The skills gained through the Academy advance and increase the number of effective community-based watershed partnerships in Indiana, equipping them to more effectively address non-point source pollution in their watershed. A few comments from participants illustrate the impact that the Academy (IWLA) has had on their ability to lead in their own watersheds: "The IWLA helped me tremendously. First, I gained a new prospective as to the impact those living within the watershed have on the water quality and health of the streams and rivers making. Secondly, it solidified for me the need to use a "win-win" approach in working with the stakeholders." "I have been a watershed coordinator for one year this week. I wish I could have taken this course BEFORE I took the job. I gave a presentation two weeks ago to 400 people and nobody was aware of the information that I gathered using the tools from IWLA."

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management

Outcome #2

1. Outcome Measures

Number of participants who improve decision making for use of water resources

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	3395

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Due to improper filling of spray tanks, contamination of wells by pesticides is a big concern. When families depend on well water for their drinking water supply even a small amount of contamination from a pesticide may leave them with an undrinkable water supply. Along with the water supply for the family, the well water may also provide a water supply for livestock. Properly informing farmers how to fill spray tanks without having them contaminate a well will help to stop this problem.

What has been done

In February, 17 individuals attended the Private Pesticide Applicator Recertification meeting at the Perry County 4-H Fairgrounds. At the meeting one of the topics presented was on well contamination and how to prevent contamination of wells with pesticides. Following the presentation, an evaluation was distributed to determine the information gained during the program.

Results

17 individuals completed the evaluations. When asked what the pesticide applicators awareness of well contamination from mixing pesticides was prior to the program, 29% of the individuals who responded said there was very much a risk, 41% said there was a minor risk, and 17% said there was not a risk at all. Following the program, 52% responded that well contamination was very much a risk, 12% thought that it was a minor risk and 29% thought that it was not a risk at all. Following the presentation when asked if they would make any changes to the way they fill sprayers, 53% of them said they would not change anything because they already fill sprayers from a water tank or they leave an air gap. 35% of them also said that they would stay by the sprayer while filling it with water. Of those that completed the evaluation 88% of them raised corn and soybeans. When asked for acres that currently farm, 24% farm 100 or less acres, 59% farm 101 to 500 acres, and 18% farm 501 to 1000 acres.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
111	Conservation and Efficient Use of Water
102	Soil, Plant, Water, Nutrient Relationships

Outcome #3

1. Outcome Measures

Number of participants who increase knowledge of proper application of fertilizer, manure and waste products to soil and potential for environmental consequences of misapplication

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	816

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Subsurface tile drainage is an essential water management practice on many highly productive soils in the Midwest. However, nitrate carried in drainage water can lead to local water quality problems and contribute to hypoxia in the Gulf of Mexico, so strategies are needed to reduce the nitrate loads while maintaining adequate drainage for crop production. Drainage water management is one of the practices that can be used to reduce nitrate loads from tile drained lands.

What has been done

We collaborated with drainage researchers, extension specialists, federal agency staff, and the agricultural drainage industry to develop and promote new strategies for managing drainage to reduce nitrate losses. We developed a regional extension publication "Questions and Answers about Drainage Water Management in the Midwest" that explains current knowledge of drainage water management and its effectiveness.

Results

The regional publication has been used in presentations, field days, tours, and policy committees such as a Hypoxia Nutrient Management Subcommittee. It won an Education Aids Blue Ribbon Award from the American Society of Agricultural and Biological Engineers. More than 8000 copies have been distributed throughout the Midwest and nationally to Extension staff, NRCS, ARS (Agricultural Research Service), and the drainage industry. A second printing is being organized. The drainage management research and demonstration project will enable us to develop regional drainage management recommendations for the first time, as well as involve producers and the drainage industry (drain tile manufacturers and land improvement contractors) in the recommendations and resulting education.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
104	Protect Soil from Harmful Effects of Natural Elements
133	Pollution Prevention and Mitigation
102	Soil, Plant, Water, Nutrient Relationships

Outcome #4

1. Outcome Measures
Number of participants who increased adoption of proper application of fertilizer, manure and waste products to soil

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	806

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
104	Protect Soil from Harmful Effects of Natural Elements
102	Soil, Plant, Water, Nutrient Relationships
133	Pollution Prevention and Mitigation

Outcome #5

1. Outcome Measures

Number of participants who increase knowledge of best management practices for optimal manure nutrient utilization with on- and off-site agricultural lands

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	288

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
133	Pollution Prevention and Mitigation
112	Watershed Protection and Management

Outcome #6

1. Outcome Measures

Number of participants who adopt best management practices for optimal manure nutrient utilization with on- and off-site agricultural lands

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	264

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation

Outcome #7

1. Outcome Measures
Number of participants who increase knowledge of the value of ponds in landscapes and methods for installing and managing ponds

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	1029

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
133	Pollution Prevention and Mitigation
135	Aquatic and Terrestrial Wildlife

Outcome #8

1. Outcome Measures

Number of participants who increase value of landscapes through better installation and management of ponds

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	45

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
135	Aquatic and Terrestrial Wildlife
133	Pollution Prevention and Mitigation

Outcome #9

1. Outcome Measures

Number of participants who increase knowledge of on-site wastewater treatment siting and maintenance needs

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	280

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

As the populations of Dearborn, Ohio and Switzerland Counties have grown, wastewater treatment has become an issue of increasing concern for local governments in these counties. In response, the Wastewater Issues Workshop was offered to provide local government officials with up-to-date, reliable information on wastewater treatment issues and assist them in addressing these issues in their communities.

What has been done

A workshop was developed with topics chosen to address watersheds and their importance to communities, the challenges of on-site septic systems, constructed wetlands as an alternative wastewater treatment method for communities and wetland creation and enhancement programs available through NRCS. Local government officials in 3 counties, including plan commission and BZA members, county council and commissioners, city officials, utility directors and health department officials were invited.

Results

The Wastewater Issues Workshop was attended by 24 local government officials. Ten evaluations were completed and returned. All of the respondents indicated the workshop met or exceeded their expectations and all felt the information presented at the workshop was beneficial.
Knowledge of watersheds increased by an average of 21%; knowledge of constructed wetlands increased by an average of 28%; knowledge of constructed wetlands for wastewater treatment increased by an average of 30%; knowledge of on-site septic systems increased by an average of 17%; and knowledge of NRCS Wetland Creation and Enhancement programs increased by an average of 18%.
100% of respondents felt, as a result of this workshop, that they had a better understanding of how to address the challenges of on-site septic systems in their communities and 100% felt constructed wetlands could be a potential wastewater treatment option in their communities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
131	Alternative Uses of Land
112	Watershed Protection and Management
132	Weather and Climate

Outcome #10

1. Outcome Measures

Number of participants who make more informed decisions for on-site wastewater treatment siting and maintenance

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	229

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
131	Alternative Uses of Land
133	Pollution Prevention and Mitigation
112	Watershed Protection and Management

Outcome #11

1. Outcome Measures

Percentage reduction in the number of water quality violations related to animal production and land application in the state of Indiana

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	5	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation

Outcome #12

1. Outcome Measures

At least 15 percent of the tree care providers in Indiana will be certified arborists.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	15	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources

Outcome #13

1. Outcome Measures
Number of professional natural resource advisors who have the skills necessary to assess the health of the wildlands

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	53

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife
123	Management and Sustainability of Forest Resources

Outcome #14

1. Outcome Measures

Owners of 15 percent of wildlands will have a relationship with knowledgeable professional natural resource advisors and have developed and implemented a management plan

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
135	Aquatic and Terrestrial Wildlife

Outcome #15

1. Outcome Measures

Natural resource professionals and wildland owners who have developed and implemented management plans will work with an additional 20 percent of landowners to develop and implement management plans.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	162

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife
123	Management and Sustainability of Forest Resources

Outcome #16

1. Outcome Measures

Percentage of owners of wildlands who will have assessed the health of their lands and developed and implemented management plans

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	15	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
135	Aquatic and Terrestrial Wildlife

Outcome #17

1. Outcome Measures

Number of certified arborists maintaining their certification

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	254

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources

Outcome #18

1. Outcome Measures

Number of landowners with knowledge of proper tree planting and management techniques

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	1300

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources

Outcome #19

1. Outcome Measures

Number of participants who increased their knowledge of natural resource management

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	14

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources

Outcome #20

1. Outcome Measures
Number of participants who increased their knowledge of proper application of pesticides

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	113

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation

Outcome #21

1. Outcome Measures

Number of participants who increased their knowledge of topsoil importance

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	806

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships

Outcome #22

1. Outcome Measures

Number of participants who increased their knowledge of Indiana's diverse wildlife

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	276

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
135	Aquatic and Terrestrial Wildlife

Outcome #23

1. Outcome Measures

Number of woodlot owners who improved their management skills

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	24

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants

Evaluation Results

Key Items of Evaluation

Program #8

V(A). Planned Program (Summary)

1. Name of the Planned Program

Plants and Their Systems

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms	12%		12%	
202	Plant Genetic Resources	3%		3%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plar	8%		8%	
205	Plant Management Systems	16%		16%	
206	Basic Plant Biology	11%		11%	
211	Insects, Mites, and Other Arthropods Affecting Plants	15%		15%	
212	Pathogens and Nematodes Affecting Plants	14%		14%	
213	Weeds Affecting Plants	9%		9%	
215	Biological Control of Pests Affecting Plants	3%		3%	
216	Integrated Pest Management Systems	9%		9%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	34.0	0.0	49.0	0.0
Actual	67.1	0.0	154.8	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
2075426	0	2326073	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
2384635	0	2625959	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
206478	0	6716340	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•Conducted meetings, conferences, and workshops
•Published newsletters and Extension publication
•Established web sites
•Held Field days
•Had Demonstration plots
•HadTelephone consultations
•ConductedApplied research
•Used Mass media
•Held Short courses

2. Brief description of the target audience

•Agricultural crop producers
•Crop consultants
•Agribusinesses
•Landowners
•Horticultural producers
•Professionals involved with golf courses, lawn care, sod production, athletic turf, and grounds
•Individuals and families interested in small farms or alternative enterprises
•Homeowners
•Youth

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	175000	400000	20000	500000
2007	79525	1837441	17013	1860092

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	1
2007 :	6

Patents listed

* Novel Gene Targets for Lignin Modification
* Starch Over Accumulation Gene
* Use of The N-Terminal Domain of SPK1 as a Novel Peptide to Detect the Apoptotic Marker. Phosphatidvl Serine
*AtGTL1, Trihelix Transcription Factor,is a Novel Regulator that Mediates Drought Stress Signaling Through Morpholgical Adaptation
* PR5K3 Controls Nighttime Starch Metabolism
* Targeting Resequencing Using Massively Parallel (TRUM)) Methods for Mutation Detection

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	122	210	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of programs offered to producers, horticultural enterprises, Master Gardeners, etc.

Year	Target	Actual
2007	500	1201

Output #2

Output Measure

- Number of research projects.

Year	Target	Actual
2007	100	297

Output #3

Output Measure

- Number of research publications.

Year	Target	Actual
2007	100	210

Output #4

Output Measure

- Number of Extension publications, new or revised.

Year	Target	Actual
2007	200	122

Output #5

Output Measure

- Number of volunteers trained to assist with information and programs.

Year	Target	Actual
2007	500	7936

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of horticultural enterprises who increase knowledge of new and appropriate technologies and effective cropping practices to produce high quality products while protecting, preserving and sustaining their land and the regional environment
2	Number of horticultural enterprises who adopt new and appropriate technologies and effective cropping practices to produce high quality products while protecting, preserving and sustaining their land and the regional environment
3	Number of Indiana citizens who increase knowledge of proper landscape and garden management.
4	Number of volunteers who increase knowledge of consumer horticulture to serve as first detectors for symptoms of invasive species.
5	Number of professional turf managers who increase knowledge of pesticides, nutrients, and water inputs for maintaining high quality turf.
6	Number of professional turf managers who reduce pesticide, nutrient, and water inputs while maintaining high quality turf.
7	Increase percentage of high quality turf will be maintained with reduced pesticides, nutrient and water inputs.
8	Number of crop producers who increase knowledge of integrated pest management practices
9	Number of acres of field crops (corn, soybeans, forage, small grains) in which pests are managed using an integrated pest management system.
10	Number of crop producers who increase knowledge of best management practices in crop, nutrients, and related soil/water decisions.
11	Number of producers who adopt best management practices in crop, nutrient, and related soil/water decisions.

Outcome #1

1. Outcome Measures

Number of horticultural enterprises who increase knowledge of new and appropriate technologies and effective cropping practices to produce high quality products while protecting, preserving and sustaining their land and the regional environment

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	4973

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Because of significant price premiums for organically grown products and the desire of many producers to raise products in a sustainable way, many have expressed interest in learning about economics, certification and production methods for organically grown products.

What has been done

This multi state IPV workshop was originally the result of the initiation of multi state organic production programs by representatives of Purdue's Small Farms Team. The planning committee consisted of representatives of each of the universities involved and instructors were drawn from each of the institutions, as well as people outside of the university. Program publicity was distributed from each of the 34 sites via newsletters, news releases, email and telephone.

Results

Eighty eight people attended the program. Evaluations (#05-5040X) show that after attending, an average of 14.7% fewer of the attendees rated themselves as having no knowledge of 1. preventing insect problems in organic vegetable systems. 2. biological control and organic pesticides in organic vegetable production. 3. diagnosis and prevention of diseases of vegetable in organic systems and 4. specific approaches to disease management in organic systems. After attending, an average of 17.3% fewer rated themselves as having a beginner's knowledge level in each of the four areas above. After attending, an average of 28.5% more of the attendees rated themselves as being knowledgeable in each of the four areas above. After attending, an average of 3.5% fewer of the attendees rated themselves as expert in the four areas above.

4. Associated Knowledge Areas

KA Code	Knowledge Area
213	Weeds Affecting Plants
205	Plant Management Systems
212	Pathogens and Nematodes Affecting Plants
211	Insects, Mites, and Other Arthropods Affecting Plants
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems

Outcome #2

1. Outcome Measures

Number of horticultural enterprises who adopt new and appropriate technologies and effective cropping practices to produce high quality products while protecting, preserving and sustaining their land and the regional environment

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	1920

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems
213	Weeds Affecting Plants
211	Insects, Mites, and Other Arthropods Affecting Plants
215	Biological Control of Pests Affecting Plants
212	Pathogens and Nematodes Affecting Plants
205	Plant Management Systems

Outcome #3

1. Outcome Measures

Number of Indiana citizens who increase knowledge of proper landscape and garden management.

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	83419

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Master Gardener classes around Indiana always fill up quickly. The class on annuals and perennials can be the highlight of the course. Additionally, these gardeners like to experiment, so they are interested in learning about underused plants and new varieties.However, most extension staff in charge of Master Gardener classes have expertise in agronomy or animal science but not in ornamental plants. Thus, there is a need for a thorough but enjoyable class on annuals and perennials.

What has been done

A three-hour class that covers growing annuals, bulbs, perennials, and ornamental grasses was created. The presentation also includes detailed information on a number of familiar and unfamiliar plants that are well suited for Indiana. The talk was presented to Master Gardener classes in fifteen counties (16 talks) from Oct 2006 through Sept 2007. The students are given detailed handouts, and I always plenty of samples so they can see the plants up close and personal.

Results

The feedback on these classes has been overwhelmingly positive. Of 182 students responding, all agreed or strongly agreed that the presentations would help them grow herbaceous plants in their home gardens and that they learned new information about herbaceous plants in the class. All except five responded that they would change the way they grow herbaceous plants.
How did the students respond? "The information was excellent. I enjoyed every single minute and learned a lot of new things." "Thank you for a great class! I am thinking about my garden and what is needed next." "I look forward to the new season because of the facts and tips I learned." "Gave me many ideas for my garden." "Loved the pictures and color brought life to presentation." "I learned a lot from her. I am very excited about next year's flowerbeds and gardens." "If you did not want to garden before your class, you would after listening to you!" "I am so ready to get started!" WOW I want to learn more!"

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
212	Pathogens and Nematodes Affecting Plants
211	Insects, Mites, and Other Arthropods Affecting Plants
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems
213	Weeds Affecting Plants

Outcome #4

1. Outcome Measures

Number of volunteers who increase knowledge of consumer horticulture to serve as first detectors for symptoms of invasive species.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	2822

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
212	Pathogens and Nematodes Affecting Plants
211	Insects, Mites, and Other Arthropods Affecting Plants
213	Weeds Affecting Plants

Outcome #5

1. Outcome Measures

Number of professional turf managers who increase knowledge of pesticides, nutrients, and water inputs for maintaining high quality turf.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	6425

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Professional turf managers as well as homeowners require the latest information in order to maintain turf areas effectively while minimizing inputs and protecting our environment.

What has been done

The Turf Program maintains an aggressive outreach program through the Midwest Regional Turf Program (based at Purdue), sponsoring educational programming, distributing newsletters and factsheets, and maintaining a constantly updated web page. The ultimate goal of the Turf Program's outreach is to empower turf managers to maintain quality turf areas, while minimizing inputs and protecting our environment.

Results

Over 3000 turf professionals attended programs sponsored by Turf Program in the last year and of those returning surveys, 92% "felt better equipped to do their job" and 82% "felt they could manage turf in a more environmentally conscious manner as a result of their attending the program(s). Furthermore, 59% of those returning surveys "felt they could save their company money" because of attending the program. The impact of the Purdue Turfgrass Science Program is felt outside of the state of IN as our faculty has made over 100 presentations in the last year to over 10,000 people at events across the United States, from Puerto Rico to Canada , and New Zealand to China. Though the impact of these appearances is hard to measure, our team members are creating tremendous goodwill and promoting Purdue University, our students, and our research in these presentations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
205	Plant Management Systems
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

Outcome #6

1. Outcome Measures

Number of professional turf managers who reduce pesticide, nutrient, and water inputs while maintaining high quality turf.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	2014

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research is needed on how bottom-up, top-down and inside-out forces interact in turfgrass ecosystems.

What has been done

Studies are being done on how mineral nutrition governs plant resource allocation, endophyte-mediated resistance, arthropod performance and the efficacy of biological controls in turfgrass environments.

Results

Such studies aim to provide basic information on the structure and function of turfgrass communities and facilitate the integration of cultural and biological management tools. This work is expected to advance the conceptual framework for the study of plant nutrition as it affects interactions between trophic levels.

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
205	Plant Management Systems
216	Integrated Pest Management Systems

Outcome #7

1. Outcome Measures

Increase percentage of high quality turf will be maintained with reduced pesticides, nutrient and water inputs.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	5	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems
205	Plant Management Systems
213	Weeds Affecting Plants
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants

Outcome #8

1. Outcome Measures

Number of crop producers who increase knowledge of integrated pest management practices

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	23130

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Agribusiness personnel need updated pest management and pesticide information throughout the year. Producers rely on agribusiness professionals to identify and inform them of pest problems and to assist with choosing appropriate management tactics because a poor decision can be expensive and result in crop loss from ineffective performance. Better informed agribusiness personnel help producers make economically and environmentally sound pest management decisions.

What has been done

The Purdue Pest Management Program coordinates a series of all day winter meetings, Crop Management Workshops, held at five locations throughout Indiana. Extension Specialists representing the Departments of Agronomy, Botany and Plant Pathology, and Entomology from Purdue University and the Office of the Indiana State Chemist present in-depth information on pest management, pesticide regulations, pesticide safety, pesticide application equipment and calibration, and more.

Results

In 2007, 781 agribusiness personnel attended the Crop Management Workshops. Participants indicated that, on average, they make or influence pest management decisions on over 24,000 acres. 97% of the participants indicated that the Workshop improved their pest management decision making ability and 96% indicated that the Workshop was worth their time and expense to attend. Over a third indicated that they would share the meeting content with colleagues and/or customers. Individual comments such as, "Enjoyed the topics and feel better prepared for the coming season," "Nice job and well-organized, practical information presented, and resources provided and where additional resources are available is appreciated," "Enjoyed the program, a lot of useful info," "Thanks for providing the Crop Management Workshops as an opportunity for us ANR Educators to receive timely updates and training related to pest and crop management" indicates the value of these meetings to the targeted audience.

4. Associated Knowledge Areas

KA Code	Knowledge Area
212	Pathogens and Nematodes Affecting Plants
215	Biological Control of Pests Affecting Plants
211	Insects, Mites, and Other Arthropods Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems
205	Plant Management Systems

Outcome #9

1. Outcome Measures

Number of acres of field crops (corn, soybeans, forage, small grains) in which pests are managed using an integrated pest management system.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	3000000	5223207

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Western corn rootworm beetles, Bt corn, and on-farm refuge management continue to be challenges for Indiana farmers.

What has been done

Work continued towards unravelling interactions between rootworm beetles, Bt corn, and on-farm refuge management.

Results

Data from the past year indicate that in-field dispersal of male Western corn rootworm responding to reproductive females is extensive. This may be a key factor in determining the number and type of male beetle moving into transgenic blocks of cornfields. The closer a female within a transgenic block of corn is to a refuge/transgenic corn interface, she is more likely to be approached by mates that emerged from the refuge corn, yet our data suggest that even females in the center of transgenic cornfields have a 40 to 60% probability that a male that approaches them will be a refuge-feeding individual. Other results indicate that the strip refuge design does a better job of dispersing refuge-feeding males into transgenic areas than the block and adjacent designs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
216	Integrated Pest Management Systems

205	Plant Management Systems
215	Biological Control of Pests Affecting Plants
213	Weeds Affecting Plants
212	Pathogens and Nematodes Affecting Plants

Outcome #10

1. Outcome Measures

Number of crop producers who increase knowledge of best management practices in crop, nutrients, and related soil/water decisions.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	21262

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

Outcome #11

1. Outcome Measures

Number of producers who adopt best management practices in crop, nutrient, and related soil/water decisions.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	100	7503

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Before-After (before and after program)
- Time series (multiple points before and after program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants
- Comparison between locales where the program operates and sites without program intervention

Evaluation Results

Key Items of Evaluation

Program #9

V(A). Planned Program (Summary)

1. Name of the Planned Program

Animals and Their Systems

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	6%		6%	
302	Nutrient Utilization in Animals	31%		31%	
303	Genetic Improvement of Animals	7%		7%	
304	Animal Genome	13%		13%	
305	Animal Physiological Processes	3%		3%	
306	Environmental Stress in Animals	3%		3%	
307	Animal Management Systems	9%		9%	
308	Improved Animal Products (Before Harvest)	8%		8%	
311	Animal Diseases	12%		12%	
315	Animal Welfare/Well-Being and Protection	8%		8%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	20.0	0.0	50.0	0.0
Actual	26.3	0.0	192.1	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
856923	0	1669045	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
987981	0	1884225	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
131058	0	11039260	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

· Foster leadership and economic development and facilitate strong partnerships and participation in state, regional, national, and international agencies, organizations, and groups.

· Develop collaborative, multidisciplinary approaches that respond to short- and long-term educational needs and issues.

· Encourage participation by extension specialists in: Taskforces, Review Committees, Advisory Boards, Editorial Boards, Commodity committees/boards, Invited presentations, Honors and Awards, Common Interest Groups, Professional Societies

•Complete “needs assessment” for each species

· Develop publications, workshops, consultations, seminars, certification programs, distance education modules, field days, and other opportunities.

· Increase number of participants in life-long learning programs.

2. Brief description of the target audience

· Poultry and Livestock Producers
· Farm employees
· Nutritionists and consultants
· Veterinarians
· Small flock/herd owners
· Youth
· Consumers
· County officials
· Government Officials

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	**Target**	**Target**	**Target**	**Target**
Plan	40000	200000	10000	50000
2007	19051	438766	6001	4918

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	1
2007 :	2

Patents listed

* A Visual Analytics Tool Using Combined Statistical Interfaces
* Veterinary Medical Records information Data Entry and Capture Macros

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	138	32	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of educational workshops and seminars offered to poultry and livestock producers

Year	Target	Actual
2007	100	226

Output #2

Output Measure

- Number of websites and publications developed

Year	Target	Actual
2007	100	138

Output #3

Output Measure

- Number of research projects

Year	Target	Actual
2007	50	134

Output #4

Output Measure

- Number of consultations

Year	Target	Actual
2007	25	998

Output #5

Output Measure

- Number of K-12 classroom visits

Year	Target	Actual
2007	{No Data Entered}	34

Output #6

Output Measure

- Number of aquaculture workshops and seminars

Year	Target	Actual
2007	{No Data Entered}	3

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of poultry and livestock producers who increase their knowledge of up-to-date information and technologies, management practices, and value-added opportunities
2	Number of poultry and livestock producers who adopt up-to-date information and technologies.
3	Number of livestock producers adopting practices to enhance sustainability of their operations.
4	Number of livestock producers expanding their operations.
5	Number of poultry and livestock producers utilizing animal welfare assessments to enhance their management systems.
6	Number of poultry and livestock producers who increased their knowledge of environmental stewardship practices and environmental regulations.
7	Number of poultry and livestock producers adopting management practices that maximize environmental stewardship.
8	Number of poultry and livestock producers developing comprehensive nutrient management plans.
9	Percentage change in number of poultry and livestock producers who enhance soil fertility and reduce soil pollution through properly applied animal waste
10	Number of livestock producers who increased their knowledge about alternative feedstuffs
11	Number of 4-H member Youth Pork Quality Assurance certified
12	Number of livestock tested for reproductive soundness
13	Number of youth who gained knowledge about the livestock industry, animal feeding, and/or production
14	Number of farmers who increased knowledge of fish farming

Outcome #1

1. Outcome Measures

Number of poultry and livestock producers who increase their knowledge of up-to-date information and technologies, management practices, and value-added opportunities

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	4650

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Pork Producers are in need of current, relevant information to insure that they remain competitive. There are few organized educational programs available in the State of Indiana. As the largest pork producing area of the state, the Clinton-Carroll County area is an appropriate location for a program of this type to be held during the winter.

What has been done

Clinton County Extension Service in cooperation with the Clinton County Pork Producers sponsored a one-day program at Rossville High School on January 25, 2007. A total of 13 educational sessions were offered covering a variety of topics ranging from marketing strategies to manure management and herd health.

Results

A total of 56 Pork Producers and Agri-business people attended the program. The participants represented 12 Indiana counties and were responsible for an annual production of over 180,000 hogs. Of those completing surveys;

- 100% felt the Conference provided them with information they would be able to use on their operation
- 100% felt the Conference provided them with sources of information that would assist them with their operation
- 100% believed they would be able to better address issues facing their operation as a result of this Conference
- 93% believed the Conference had improved their networks and gained them additional contacts
- 87% stated that they would do something differently on their operation as a result of the conference

The majority of the respondents felt that having a program such as this on an annual basis would be beneficial so the 2008 Conference has been scheduled for January 22.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
315	Animal Welfare/Well-Being and Protection
308	Improved Animal Products (Before Harvest)
301	Reproductive Performance of Animals
307	Animal Management Systems
311	Animal Diseases

Outcome #2

1. Outcome Measures

Number of poultry and livestock producers who adopt up-to-date information and technologies.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	1964

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

With the rising cost of inputs such as fuel, fertilizer, and labor, the profit margins in all areas of production agriculture become smaller. In order for ruminant livestock producers to remain profitable or become profitable once again, they need to be time efficient and make the most of their resources. Implementing management-intensive grazing offers this opportunity by reducing labor requirements and eliminating waste.

What has been done

A 2-day hands-on grazing school was held at the Feldun Purdue Ag Center. The program allowed livestock producers to learn about topics such as: stocking density, the amount of feed in a paddock, forage species selection and growth, ruminant nutrition, animal health issues, pasture health and renovation, soil fertility, nutrient cycling and economics of. Participants visited with 2 innovative producers utilizing rotational grazing.

Results

A follow up survey was conducted in October 2006 (2007 follow-up will be sent Oct 2007) to determine what producers had been able to plan and implement in 3 months following the grazing program. Surveys were sent to the managers of 13 farms (15 attendees). Seven were returned.
As a result of the 2006 program, 1 producer had already redesigned and implemented a new paddock system and 4 others indicated they were planning a new system. Due to the grazing program producers had or planned to track costs, test their soils and forages for nutrient levels, prolong the grazing system using stockpile forages and/or utilize crop residues. Five of seven (70%) indicated the Grazing 102 program had increased their net income, two said it was too early to tell.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
311	Animal Diseases
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)

Outcome #3

1. Outcome Measures

Number of livestock producers adopting practices to enhance sustainability of their operations.

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	1400

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
302	Nutrient Utilization in Animals

Outcome #4

1. Outcome Measures
Number of livestock producers expanding their operations.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	137

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
308	Improved Animal Products (Before Harvest)
307	Animal Management Systems

Outcome #5

1. Outcome Measures

Number of poultry and livestock producers utilizing animal welfare assessments to enhance their management systems.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	862

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
315	Animal Welfare/Well-Being and Protection

Outcome #6

1. Outcome Measures

Number of poultry and livestock producers who increased their knowledge of environmental stewardship practices and environmental regulations.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	1179

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Indiana is experiencing significant growth in the animal agriculture sector, much in the form of CAFOs, and many Indiana citizens are concerned about the impact these farms might have on their communities. Purdue has brought together a wide range of experts to address and research different concerns surrounding CAFOs. Our goal is to afford consumers, producers, and community leaders the ability to make well-informed decisions regarding issues coinciding with the expansion of animal agriculture.

What has been done

We have generated an interactive website dealing with CAFOs and their possible effects on air and water quality, public health, and the social/economic make-up of the surrounding communities. There are currently 12 issues papers on the site. We have also identified areas that require further study and set up teams to undertake this research. Current research projects include the effects of CAFOs on the local economy and the effects of odor and emissions on the respiratory health of neighbors.

Results

The website currently has 12 issue papers dealing with different aspects of CAFOs. This website is linked by governmental organizations, environmental groups, and popular press outlets and the information has been presented to zoning board members (the original target audience). Results from the two current research projects should be available within the next year and will provide much needed information in the areas of economics and public health.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
307	Animal Management Systems

Outcome #7

1. Outcome Measures

Number of poultry and livestock producers adopting management practices that maximize environmental stewardship.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	150

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
302	Nutrient Utilization in Animals

Outcome #8

1. Outcome Measures

Number of poultry and livestock producers developing comprehensive nutrient management plans.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	117

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
302	Nutrient Utilization in Animals

Outcome #9

1. Outcome Measures
Percentage change in number of poultry and livestock producers who enhance soil fertility and reduce soil pollution through properly applied animal waste

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

307	Animal Management Systems

Outcome #10

1. Outcome Measures

Number of livestock producers who increased their knowledge about alternative feedstuffs

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	82

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The surge in ethanol production has affected beef cattle producers in Indiana by increasing the price of corn fed to cattle and making available large amounts of byproducts such as distiller's grains. Producers need to be aware of methods to feed these products because of possible negative ramifications if improperly formulated. Beef producers that adopt feeding techniques early in this ethanol cycle may benefit by lower prices.

What has been done

Working in conjunction with the Indiana Beef Cattle Association, ten meetings were organized across Indiana that emphasized distillers grains from biofuels and its use in beef rations. These programs were taught by the Purdue University Beef Team, a group of Purdue Animal Science specialists Veterinarians, Agronomists and Extension Educators. Over 1000 beef producers attended these programs. Additionally the program covered the Indiana State Veterinarians rules on livestock diseases.

Results

78% of the beef producers responding to a survey said they intended to try techniques discussed at the sessions. 57% stated that 61-100% of the program was useful information to them and 95% stated they were satisfied with the program. 89% also said the program motivated them. When asked,what was most useful about the program?, most producers responded it was the information about distiller's grains. The response to the question, of the techniques discussed what do you intend to try?, several mentioned feeding distillers grains and also some came to the realization it may not be the best option on their farm. When asked What would you do differently as a result of this workshop?, answers include:
Pay more attention to proteins and other nutrients used in feeding.
Think about distillers in the future
Watch for health affects to cows caused by distillers.
Explore possible use of by products in ration.
Work more closely with Purdue University.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

Outcome #11

1. Outcome Measures

Number of 4-H member Youth Pork Quality Assurance certified

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #12

1. Outcome Measures
Number of livestock tested for reproductive soundness

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	60

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals

Outcome #13

1. Outcome Measures

Number of youth who gained knowledge about the livestock industry, animal feeding, and/or production

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	690

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #14

1. Outcome Measures

Number of farmers who increased knowledge of fish farming

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	80

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants

Evaluation Results

Key Items of Evaluation

Program #10

V(A). Planned Program (Summary)

1. Name of the Planned Program

Economic and Community Development

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
608	Community Resource Planning and Development	80%		80%	
803	Sociological and Technological Change Affecting Individuals,	3%		3%	
805	Community Institutions, Health, and Social Services	17%		17%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	4.0	0.0	2.0	0.0
Actual	2.8	0.0	2.8	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
126182	0	66549	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
135828	0	75129	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
9646	0	146006	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- •Workshops
- •Extension publications
- •Research
- •Website Development
- •IP Video Programs
- •One-on-One Consultation
- •Collaboration with other agencies

2. Brief description of the target audience

•Local elected officials
•Staff and volunteers of nonprofits/NGOs
•General Citizens

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	10000	50000	5000	25000
2007	53529	558072	6562	85261

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- number of workshops conducted

Year	Target	Actual
2007	12	652

Output #2

Output Measure

- number of research projects

Year	Target	Actual
2007	3	12

Output #3

Output Measure

- number of publications

Year	Target	Actual
2007	6	664

Output #4

Output Measure

- number of collaborations with other agencies

Year	Target	Actual
2007	20	919

Output #5

Output Measure

- number of IP-video programs

Year	Target	Actual
2007	4	183

Output #6

Output Measure

- number of one-on-one consultations

Year	Target	Actual
2007	36	1854

Output #7

Output Measure

- number of web sites developed

Year	Target	Actual
2007	2	17

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of communities that increase knowledge of how to identify and address critical issues for citizens
2	Increased number of communities engaged in issue identification and action planning
3	Number of communities who improve their capacity to identify and address critical issues that impact the lives of its citizens
4	Number of communities increasing knowledge related to creating sustainable and competitive local economic development systems
5	Increased number of communities creating more sustainable and competitive local economic development systems.
6	number of participants who are building their community leadership skills and becoming more active in community problem-solving.
7	number of participants becoming more active in community problem-solving efforts

Outcome #1

1. Outcome Measures

Number of communities that increase knowledge of how to identify and address critical issues for citizens

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	370

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Most communities lack the civic space in which to frame issues and identity ways to address them. Extension provides that civic space acting as a neutral convener, providing the facilitation needed to engage stakeholders, and serving as an impartial source of research-based information to assist the community in making better-informed decisions.

What has been done

Extension has been involved in 370 communities helping them build their capacity to identify and address critical issues. Responding to the need for programming related to local government finance, two state-wide sessions were delivered on the topic. Over 600 local government officials attended these programs.

Results

The following are some of the impacts and results from the programming related to this issue. (1) In the local government finance program 97% of participants indicated that the information from the session helped them identify important community issues related to local government finance and 88% indicated that their new knowledge would have an impact on the fiscal well-being of their community. (2) The adult advisors attending the Allen County youth summit indicated their perception of the significant benefits of a venue in which youth could identify community issues about which they are concerned and to communicate these concerns to adult civic leaders. As a result, the youth applied for and received three grants of $500 each (total of $1,500) to help address community needs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #2

1. Outcome Measures

Increased number of communities engaged in issue identification and action planning

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	274

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There are especially significant issues resulting from the growing number of Hispanic and Latino residents calling Indiana home. Hispanic/Latinos comprised the largest group of immigrants coming to the State of Indiana. Many communities face significant challenges related to the changes that can result from this phenomenon.

What has been done

Extension has worked with 274 communities to help identify issues and to develop action plans to address those issues. Purdue Extension created, The Changing Face of Indiana, a program to educate Hoosiers about the immigration, the cultural and economic contributions of Latino immigrants, the economic and quality of life issues that can result for both Latino and non-Latino residents, and facilitation of the actions communities can take to address these issues. This year 575 individuals attended.

Results

A comprehensive evaluation of this program was conducted and among the findings were that 93% of participants identified specific actions their community could take to manage the transition. Some of the action items appearing most often include language training for non-Spanish speakers, English as a New Language training for Spanish speakers, find and create opportunities for cultural exchange, and the implementations of efforts to make their communities welcoming environments.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #3

1. Outcome Measures
Number of communities who improve their capacity to identify and address critical issues that impact the lives of its citizens

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	272

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #4

1. Outcome Measures

Number of communities increasing knowledge related to creating sustainable and competitive local economic development systems

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	341

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #5

1. Outcome Measures

Increased number of communities creating more sustainable and competitive local economic development systems.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	56

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Entrepreneurship can play a significant role in economic development. Few Indiana communities have articulated an entrepreneurship strategy. Communities with strategies that include a focus on entrepreneurship can be more proactive in creating sustainable and competitive local economic development systems

What has been done

Extension has worked with 56 communities to help create more sustainable local economic development systems. One county joined with partners to conduct an Entrepreneurship & Small Business Expo. The target market was small business owners and prospective entrepreneurs. The Expo included special speakers and opportunities for attendees to learn about firms that serve small businesses, including lenders, professional services, educational institutions, and business development organizations.

Results

The event was attended by 168 individuals representing 102 different businesses. 30 business-support organizations were also represented. The overwhelming majority indicated that the event was helpful and attending entrepreneurs were surveyed and 98% indicated that they had learned one new thing that would be helpful in growing their business.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #6

1. Outcome Measures
number of participants who are building their community leadership skills and becoming more active in community problem-solving.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	3487

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

As community issues become more complex, additional help is often needed to build leadership skills that will result in citizens abilities to be more effective in addressing their communities'pressing issues. Nonprofit organizations play a vital leadership role in Indiana's communities and they need new tools be effective in serving their communities.

What has been done

Extension has served 3,487 individuals by offering educational programming to help them build their community leadership skills and become more active in addressing their communities' issues. Purdue Extension offered The Beginner's Guide to Grant Writing Program in 23 counties.

Results

The program has built a solid reputation around the state for assisting nonprofits, especially small, community-based organizations. Attendees report that their participation in the program assisted them with applying for and receiving over $5.5 million in funding to address community issues. Grants have supported building renovations, infrastructure development, school-based programs and equipment, small business funding, environmental protection projects, health and human resource projects, programs to enhance computer and health education projects, youth programs, and general operating dollars supporting organization growth and sustainability.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #7

1. Outcome Measures

number of participants becoming more active in community problem-solving efforts

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	2000	3668

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Case Study

Evaluation Results

Key Items of Evaluation